The RUBBER AGE

225 Fourth Avenue, New York

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RUBBER EXCHANGE OF NEW YORK, INC. STARTS TRADING IN RUBBER FUTURES

Contracts Valued at Over $500,000 Change Hands on First Day—Exchange to be Open Five Days a Week from 10 a. m. to 3 p. m.—Many Present at Opening

Trading in rubber with a market value of more than $500,000., the Rubber Exchange of New York, Inc. opened for business February 15 at 31 South William St. with an attendance during part of the day which taxed the capacity of the floor. The opening trading was marked by exciting bidding, 64 contracts of 2½ tons each being dealt in during the first hour.

In declaring the exchange formally opened, President Francis R. Henderson said he was convinced that the exchange would add a worthy chapter to the record of American marketing methods. The rise of rubber to its present importance, he said, was one of the romances of modern business. In commenting upon the recent marked fluctuations in the price of crude rubber, he said:

"Over production plus temporary under consumption brought ruinously low prices in 1921. Then artificial restriction of production brought about a temporary scarcity last year with very high prices. Enforced curtailment in consumption was the inevitable result with a consequent decline in prices. In each case the market had no shock absorber, and price movements were dangerously violent.

"The inauguration of the Rubber Exchange of New York will provide a greater number of traders in rubber, and through its greater breadth the market will absorb the purchases and sales in a more orderly manner. This will provide the necessary brake on price movements which will give producer and consumer the opportunities of safeguard they justly demand."

Among the early orders executed on the exchange were a number said to be for foreign account. Jerome Lewine, of H. Hentz & Co., one of the leading Cotton Exchange houses, was one of the most active traders. Others were J. Chester Cuppia, of J. C. Cuppia & Co., and W. S. Hammesfahr, of Henderson, Helm & Hammesfahr.

Trading was confined to four months, March, May, July and December, with July the most active and May next. Prices eased up during the afternoon and closed lower.

A luncheon, given by the Board of Directors of the exchange, at India House was one of the features of the opening. President Henderson acted as toastmaster and expressed his gratitude to officials of the New York, Cotton, New York Produce and the Coffee & Sugar Exchange for the help they had given in the organization of the new exchange.

Francis R. Henderson

Richard T. Harriss, president of the New York Cotton Exchange, in a brief address, congratulated the rubber industry upon the opening of the Rubber Exchange which he said marked an epoch in the business.

"I believe that as the years go by the real function of the exchange will be more and more appreciated," he said, "and will not be regarded merely as a footprint on the sands of time, but a monument to the foresight of you gentlemen who have brought it into being. Perhaps the best evidence of my faith in your exchange and its future is that I

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A Scene on the Floor on the Opening Day

Rubber Exchange Opens

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am a member of it and my firm (Harriss, Irby & Vose) has five memberships."

J. Barstow Smull, president of the Produce Exchange, spoke of the effort which his exchange had made to have the rubber people form an exchange in conjunction with his exchange. "There are not a sufficient number of open markets in New York to-day where we can deal in futures," he said.

C. R. Berrian, vice-president of the Central Union Trust Co., said: "There is good reason to believe that the Rubber Exchange will have a steadying effect on prices and so contribute to safeguard the industry. The great function of the exchange, as I see it, is to offer a concentrated, centralized rubber market where —to quote some well known authority— open prices will be openly arrived at."

Trading Rules

Trading on the Exchange is governed by the following regulations: All contracts are for 5,600 lb. or multiples thereof. Rubber may be delivered against contracts at differentials established by the Adjustment Committee on the day of delivery. No contracts for future delivery may be made or recorded for any month excepting the current month or one of the eleven succeeding months. Quotations are in cents and decimals of a cent per pound. No transaction is permitted wherein the price shall contain a smaller decimal than one-tenth of one cent per pound. Thus, each fluctuation of one-tenth of one cent would make a difference of $5.60 pro or con on a 5,600-pound contract.

The following rates of commission are the lowest that may be charged on transactions for future delivery: (a) For each 5,600 pounds bought or sold for any person residing in the United States or Canada who is not a member of the Exchange, $12.50. (b) For any person residing outside of the United States or Canada who is not a member of the Exchange, the foregoing rate plus $2.50. (c) Rates for members residing in the United States or Canada, $6.25 for 5,600 pounds. (d) For foreign members, $8.75 for each 5,600 pounds.

The following grades of Hevea plantation rubber may be delivered against a contract on the exchange:—

"(1) Standard quality ribbed smoked sheets; (2) standard quality first latex crepe; (3) good F.A.Q. ribbed smoked sheets (Rubber Exchange type) at an allowance of 2 cents per pound; (4) off quality first latex crepe (Rubber Exchange type) at an allowance of 2 cents per pound; (5) ordinary F.A.Q. ribbed smoked sheets (Rubber Exchange type) at an allowance of 4 cents per pound."

All adjustments are to be made by the Quality Committee in accordance with the rule governing arbitration.

In a statement given out by the Exchange shortly before opening it was stated that, "25 years ago, there would have been no excuse for the existence of a rubber exchange—no warrant for organized dealings in contracts. In 1900, the world's production of rubber amounted to only 53,890 tons which, at an estimated average price for that year of 63½ cents per pound, gave a gross value for the total product of $76,653,000. Transactions on the part of producers, distributors and consumers were easily conducted through established channels, and the output of the Amazon, the Far East and other producing localities found its way to market much as any other commodity in which the volume of trading was of moderate proportions.

Exchange Now Necessary

"Conditions have undergone a marvelous transformation in the last quarter of a century. In 1925, the world's production of rubber reached a total of 503,000 tons. The product, according to the U. S. Department of Commerce, had an average value of 48½ cents per pound, which gives the impressive total of $546,459,000.

"These figures do not tell the whole story. In 1900, the automobile was familiarly known to the public as a horseless carriage. In those days it was not an industry, but an experiment. The pneumatic tire for the motor car was in the earliest stages of development. Such a thing as the balloon tire of these days would have been regarded as a practical impossibility. The whole sale value of tire production last year is estimated at $886,700,000, and the retail value, ac-

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A View of the Floor Showing the Trading Ring

DOVAN LOSES SUIT AGAINST CORONA CORD TIRE TO VALIDATE DPG PATENT

Court Decides that Morris L. Weiss, Assignor to Dovan Chemical Corp., was not the Inventor or Discoverer of Diphenylguanidine as a Rubber Accelerator

In the decision recently handed down by Judge Gibson in the District Court of the United States for the Western District of Pennsylvania on the suit of the Dovan Chemical Corp., New York, against the Corona Cord Tire Co., East Butler, Pa., the Court said that in its opinion the testimony did not show conclusively that Morris L. Weiss was the discoverer of DPG as an accelerator of vulcanization and therefore declared the patent invalid.

The case, which will be appealed by the Dovan corporation, was started against the Corona company as a user of diphenyl-guanidine in an attempt to validate Weiss patent, No. 1,411,231, assigned to the Dovan corporation. This patent was declared invalid in May, 1923, in the Dovan Chemical Corp. vs National Aniline & Chemical Co. suit.

The Weiss patent was granted by the U. S. Patent Office March 28, 1922 upon application filed November 12, 1921. The patent examiner, the Court stated in his decision, cited a paper read by Dr. G. D. Kratz on Sept. 6, 1919, before the American Chemical Society, as an anticipation of the patent. Upon affidavits being furnished by Mr. Weiss to sustain a claim that he had discovered the qualities of DPG as an accelerator prior to the Kratz paper, the patent was issued. No testimony was introduced to show any discovery by Dr. Kratz prior to the reading of his paper. The patentee testified that he began to investigate DPG early in 1918 and made a number of tests with it prior to February, 1919. His testimony was supported by other witnesses in the factory of the Republic Rubber Co., Younstown, Ohio, where the tests were made. Their testimony was intended to establish completion of the discovery of DPG prior to the reading of Dr. Kratz's paper. It was admitted that the Republic Rubber Co. never used DPG in the manufacture of any goods prior to March 1, 1920.

According to the Court, the testimony showed that prior to September 7, 1919 Weiss made a number of tests with DPG but that they were too few in number and as a result inconclusive in so far as superiority of DPG over TPG was shown. Judge Gibson therefore declared the patent invalid and upheld the Corona Cord Tire Company in its contentions. Attorneys for defendant were Pennie, Davis, Marvin & Edmonds, 165 Broadway, N. Y. C. F. E. Barrow of this law firm was trial attorney.

(A complete resumé of the past litigation and history of DPG appear on Page 353 of this issue.—EDITOR)

Federal to Build Addition

The Federal Rubber Co., Cudahy, Wis., manufacturers of tires and kindred rubber products, has awarded the contract for an addition to its factory. It is estimated to cost close to $275,000.

SAYS TIRE PRICE CUT WAS DUE TO INQUIRY

The recent reductions in the price of tires instead of a 25 per cent advance, which had been threatened, were effected as a direct result of the House Commerce Committee investigations into foreign control of crude rubber, according to Representative Shallenberger of Nebraska. His insistent demand as a member of the committee to investigate profits of American tire companies as well as the alleged British crude rubber monopoly, Mr. Shallenberger said, led to a price cut instead of an advance.

Making History

In every field of progress, there is always some outstanding figure of distinction.

GOODYEAR, EDISON, ROOSEVELT, PEARY, NURMI—names to conjure with—universally acclaimed as leaders in their separate spheres. Some of their qualities are found in their contemporaries—but these men stand supreme.

It is a far cry from History-making Men, to Reclaimed Rubber,—

But let us tell you that

BISON SUPER-RECLAIM

is making History.

Never has a stock like this been available before—with rubber-like qualities undreamed of previously in any Reclaimed.

It bears the true marks of distinction—superb balance, broad application, and the unequalled ability to stand the test of time.

WHY NOT TRY IT ?

U. S. RUBBER RECLAIMING CO., Inc.

100 E. 42nd St., N. Y. Factories: Buffalo, N. Y.

AKRON REPRESENTATIVE: F. F. Dugan, 617 Second Nat'l. Bank Bldg.

"43 Years Serving the Industry Solely as Reclaimers."

Rubber Exchange Opens

(Continued from Page 332)

cording to Standard Daily Trade Service, is placed at well in excess of $1,000,000,000. These figures, it should be borne in mind, do not take into consideration the countless articles for household and other purposes made from rubber.

"As matters stand today, the rubber industry ranks tenth in importance among the great enterprises of the United States.

"Perhaps a better idea of the amazing progress might be gained if we make comparison with another industry. In 1900, the total value of the cotton crop of the United States was placed at $494,000,000, less than the gross value of the rubber output of 1925. Yet in 1900, the New York Cotton Exchange had been in existence for nearly a quarter of a century.

"The basis for establishing organized trading in contracts for crude rubber is exactly the same as that which forced merchants in other world commodities to adopt similar procedure. When wheat, cotton, coffee or sugar were handled in moderate volume with the commodity passing quickly from producer to consumer, the risk involved in price changes likewise was moderate. A comparatively small number of merchant firms could conduct the business with little or no hazard resulting from price changes. It was increased in volume and the risks attendant on price changes in transit from producer to manufacturing consumer that forced the adoption of the future contract system in grain, cotton, coffee and other products, and the rubber trade of the world is now confronted by the necessity of adopting similar measures to absorb risk, provide flexibility for operations and furnish an agency that will aid in stabilizing fluctuations in price.

"The organization of the Rubber Exchange of New York, Inc., therefore, is merely a step that registers the placing of the rubber trade on the advanced plane now occupied by other great staple commodities."

Up until the opening of the Cocoa & Rubber Exchange on February 2 last and the recent opening of the Rubber Exchange of New York, trading in rubber futures was done in London. A futures market is of the greatest importance to dealers and manufacturers in view of the uncertainties regarding future prices and the possibilities of wide fluctuations, similar to those of 1925.

The popular idea of an exchange is that it is for speculative purposes only. This is far from true. An exchange which deals in a commodity, makes it possible to secure a fixed value for that commodity and its products, to the advantage of the producer, the manufacturer and the dealer, during the period of production, preparation and final distribution. Although the speculator takes the chances of fluctuation, the business interests concerned get the advantage of having these chances largely eliminated through the use of hedge sales.

A commodity, such as rubber, protected by hedge sales and for which there is always a ready market is a much more desirable collateral to bankers who require a far smaller margin in such cases than where they are without the protection of an exchange. Those who do not use an exchange, if it is available, are themselves gambling in fluctuations in prices of their products. Wide price fluctuations in a commodity are diminished on a properly organized exchange, and such fluctuations as do occur are usually due to developments representing the opinion of the trade based on carefully considered estimates of supply and demand, and on forecasted statistical conditions.

OFFICERS OF THE RUBBER EXCHANGE

The officers of the Rubber Exchange of New York, Inc. are:

President, Francis R. Henderson
Vice President, Charles T. Wilson
Treasurer, Werner S. Hammesfahr
Secretary, Walter Dutton

The board of directors is composed of the following members:

Francis R. Henderson, Werner S. Hammesfahr, Charles T. Wilson, Jerome Lewine, J. Chester Cuppia, James P. Grant and C. T. Revere. (Two more members are still to be elected to the board).

The officers of the Rubber Exchange Clearing House, Inc., 14 South William St., are:

President, Edward Maurer
Sec. & Treas., Theo. B. Carver
Asst. Treas., Edward T. Thompson

List of Members of the New York Rubber Exchange

The members of the Rubber Exchange of New York, Inc. are:—

Frank G. Alden, Julian A. Acosta, Paul Adler, Leopold S. Bache, Robert Badenhop, R. S. Baldwin, Louis Bamberger, Sylvan M. Barnet, Herman B. Baruch, S. W. Baruch, James Bennett, Joseph F. Bernard, Theodore Bernstein, Victor C. Blandin, Jacob Bleibtreu, John Chester Botts, W. Hamilton Busk, Benjamin Block, James E. Cairns, Albert P. Calvet, M. M. Carew, George H. Carnahan, I. B. Cats, George A. H. Churchill, R. L. Chipman, Louis J. Cohen, Fred Croft, Harold H. Cummings, J. Chester Cuppia, Norman C. Davidson, H. Davila, Edwin C. DeLanie, Herbert S. DeLanie, T. A. Desmond, Leo Diamond, E. A. Dressel, George B. Dryden, L. W. Dumont, Fred W. Dunbar.

Earle Bros., Paul Elbogen, B. S. Ellis, Geo. A. Ellis, Jr., Carl E. Erpf, T. K. Evans, H. N. Edwards, C. Falk, A. C. Forney, H. W. French, Geo. Friedman, Albert L. Funk, A. A. Garthwaite, Marchall Geer, Caroll V. Goran, S. E. Giudici, Leo. Goldsmith, James P. Grant, Fred W. Gravendorst, John J. Griffith, Alexander Guttman, Werner S. Hammesfahr, Ira M. Hamilburg. J. L. Handy. Roger S. Hardy, Irving H. Hare, Bayliss E. Harriss, Richard T. Harriss, Robert M. Harriss, W. L. Harriss, H. Hauff, E. Kenneth Hebden, Frank M. Hartcorn, Forst Haviland, Clarence R. Heaume, Harold H. Henderson, J. W. Herron, H. Hollesen, Robert E. Horton, Frederick Housman, Geo. H. Hutzler, Francis R. Henderson, Henry T. Helm, Frank E. Hirsch.

E. N. B. Janssen, Harry R. Jeffords, C. C. Johnston, O. F. Johnston, K. G. Judson, J. L. Julian, Wm. J. Jung, Richard Kaminski, Wm. F. Kane, C. B. Kaufmann, Louis V. Keeler, Leslie E. Keifer, R. R. Kershaw, Frank Lester Kittle, Paul W. Kocher, O. W. Kracht, Samuel Kubie, A. H. Lamborn, Maurice Lamotte, Warren A. Lamson, Harold M. Lehman, Jerome Lewine, William Liddell, Jr., Fred'k. W. Ludwig, Jesse L. Livermore, Geo. H. Logan, Irving J. Louis, Frank W. Lovett, Clarence H. Low, Flick Lowitz, Harold S. Lyon, Murray C. McComas, John McFadden, Philip G. McFadden, C. F. McPhillips, Louis P. McNamarra, A. A. Manchester, Alfred Martin, Albert F. Maurer, Edwd. Maurer, Harold C. Mayer, David L. Meyer, Murray Millenthal, Gordon H. Milne, C. A. Morse, Fred'k L. Munds, P. A. Murphy, John Morgan.

Erickson N. Nichols, Fred'k. K. Nieschlag, James E. Odell, Wm. O'Neill, Homer W. Orvis, Wm. A. Overton, W. B. Paul, Benj. B. Peabody, Henry Perlish, Fred P. Peterson, E. A. Pfaff, John J. Pflieger, Robert Pflieger, Edward A. Pierce, Wm. W. Pinney, Walter W. Price, Gerald E. Perry, Frank D. Pressinger, Lewis D. Raabin, Leslie Ravenscroft, James Rawleigh, C. T. Revere, Frank H. Robinson, Julius Rosenfeld, Abraham H. Rosenswaig, Harold A. Rouse, J. Edward Rowe, Harry Roebeck, Stephen A. Schafer, Norrie Sellar, Simon J. Shlenker, E. E. Silvernail, Elliot H. Simpson, Charles J. Sisto, Charles Slaughter, Eli B. Springs, 2nd, E. S. Stonington, C. M. Story, Robert F. Straub, Albert V. W. Tallman, E. Terasaki, H. F. Tiedeman, Richard H. Toeplitz.

Wm. R. Velthaus, Alden M. Vose, Alvin L. Wachsman, Daniel E. Wade, Joseph Wade, C. J. Walter, Sylvan E. Weil, Bulkeley L. Wells, Charles T. Wilson, Karl Wolff, N. C. Wolf, Charles E. Wood, John R. Wood, R. B. Woodbury, C. W. Walters Norman S. Walker and Benj. J. Wollman.

The foreign members of the exchange are:—

LONDON—Charles Gordon Devitt, Lewis & Peat; John Mendl Finn, Drummond, Power & Co., Ltd.; W. Glur, Faulkner & Winsor; Herbert Kean, Kuhn & Co.; Rudolf Markus, The Products Corp.; Ralph Midwood, W. H. Midwood; J. C. Ragg, J. H. Raynor & Co., Ltd.; E. W. Schluter and G. C. Schluter, Edmd. Schluter & Co.; Wm. Symington, Symington & Co.

LIVERPOOL—James Bland, A. & M. Ralli; Alfred Jackson Brown, Newall & Clayton. A. D. R. Collie, Collie & Co.; J. D. Little, Alexander Eccles & Co.; Herbert Henry Girardit, Reiss Bros.; Paul Hemelryk, Hornby, Hemelryk & Co.; F. J. Herzog, Gruning & Co.; E. Langford Jones, Beer Cowell & Co.; A. O. Lowry, A. J. Buston & Co.; J. B. Springman, J. H. Springman & Co.; W. J. Wamsley, Reynolds & Gibson.

PARIS—Adrian Alcan, Alcan & Co.; Jacob Bleibtreu, Abraham & Co.; Paul Etlin; Maurice Lehman, Joseph Dannon & Co.; R. Levy Symons; Otto Ziesenniss, H. Hentz & Co.

HAVRE—Perre Dupasquier, Societe Anonyme Dupasquier; Maurice Lamotte, Lamotte & Co.; Victor Marande; Hugo Schneider; Oliver Senn.

AMSTERDAM—Nico A. C. Hymans, Wijnand & Keppler; Wm. Van de Linde, C. Van Holk; Onnes Van Nyenrode, P. Onnes & Zoon's Handel Co.

ANTWERP—Walter Herman, G. Burrmans & Co.

COLOMBO, CEYLON—Norman Robertson, C. W. Mackie & Co., Inc.

INTERNATIONAL PULP CO., *41 Park Row, New York, N. Y.*
SOLE PRODUCERS OF PURE **ASBESTINE** SPECIALLY PREPARED FOR USE IN RUBBER
Covered and Protected by Letters Patent Registered at U. S. Patent Office, Washington, D. C.
LIBERAL WORKING SAMPLE FURNISHED FREE

R. A. STATISTICS SHOW 1925 CRUDE RUBBER CONSUMPTION OF 353,873 TONS

Consumption of Crude Rubber in Fourth Quarter Declines While Reclaimed Rubber Consumption Increases, but Figures for Entire Year Show Gain over 1924

Statistics compiled by the Rubber Association of America from the questionnaire for the fourth quarter of 1925 sent to members show that the consumption of crude rubber during that period declined against an increase in the consumption of reclaimed rubber. The statistics, which for crude rubber consumption represent 92 per cent of the entire United States industry, give total consumption for the year as 353,873 tons, against 301,788 tons, but consumption for the fourth quarter was only 78,926 tons as against 91,534 tons in the previous quarter and 83,391 tons in the corresponding quarter of 1924.

However, the value of all products shipped during the fourth quarter was only slightly less than that for the preceding quarter and was far greater than that for the same period of 1924. The value of manufactured products was $303,479,000, as compared with $233,404,000 for the final quarter of 1924.

Of the total consumption of crude rubber for the final quarter of 1925, 65,084 tons were used in the manufacture of tires and tire sundries and 13,842 tons for other products. These figures compare with 69,894 tons and 13,497 tons respectively for the final quarter of 1924.

The remarkable growth in the consumption of reclaimed rubber, as shown by the statistics of the Rubber Association, is an index that the campaign of Herbert Hoover to bring down crude rubber prices by curtailing American consumption of that commodity through the use of substitutes is bearing fruit. In the fourth quarter of 1925 production of reclaimed was 38,840 tons, compared with 31,909 tons in the previous quarter, 27,523 in the second quarter, 25,353 in the first and 25,263 in the fourth quarter of 1924. Shipments were 26,403 in the fourth quarter of 1925, against 20,864 in the corresponding quarter of 1924. Inventory in the final quarter of 1925 was 8,827, against 8,838 in the final quarter of 1924.

Inventory of scrap rubber at the end of the final quarter of 1925 was 86,846 tons, against 74,809 in the third quarter and 41,273 in the final quarter of 1924.

The grand total of crude rubber on hand and afloat to U. S. ports on Dec. 31, 1925 was 48,436 tons, against 33,131 tons in the third quarter and 54,502 tons in the final quarter of 1924.

CONSUMERS REFINING TO OPEN THIS MONTH

According to a recent announcement made by R. W. Patrick, president, the Consumers Rubber Refining Co., Inc., Pine St., Elizabeth, N. J., will open in the near future. The company will engage solely in washing, drying and milling of crude rubber for rubber manufacturers. Mr. Patrick, who was formerly a well-known broker in New York, has been active in the crude rubber market since 1914.

Mr. Brawley, a Harvard graduate, who is vice president, was chemist for a number of years for the Lancaster Tire & Rubber Co., Lancaster, Ohio, and was later connected with the Panther Rubber Mfg. Co., Stoughton, Mass. His last affiliation was with the Converse Rubber Shoe Co., Malden, Mass.

Equipment is now being installed in the plant and other preparations are being made for an early start in operations. It is said that when these preparations are completed the factory will be one of the most complete in the country for the washing, drying and milling of crude rubber. It is said that the service of the Consumers Rubber Refining Co. will include many features which none of the other washing plants now have.

THE RUBBER EXCHANGE OF NEW YORK, INC.

CRUDE RUBBER AND RUBBER FUTURES

Trading Confined to Rubber Exclusively

31 South William Street - - - New York

CONSUMPTION OF RECLAIM 320,320,000 LBS. IN 1925

Reclaimed rubber used in the United States during 1925, totaled 320,320,000 pounds, as compared with an estimated 179,200,000 pounds during 1924, while present prospects indicate that approximately 448,000,000 pounds will be produced and used during 1926, according to a report recently issued by the Department of Commerce.

These developments, according to the department, have been stimulated principally by the high prices prevailing for the crude commodity, and demonstrate the possibility of combating the monopoly through this particular means.

According to the department's report, the annual production capacity for reclaimed rubber as of January 1, 1926, was 418,185,600 pounds. Through the completion of expansions now under way, it is estimated that by April 1 this will have increased to 473,484,400 pounds, by July 1 to 517,216,000 pounds, and by October 1 to 547,926,400 pounds.

The annual consumption of crude rubber in the United States is estimated at about 900,000,000 pounds.

Pharis Lets Contract

The Pharis Tire & Rubber Co., Newark, Ohio, recently let the contract for the erection of a two-story and basement factory addition. The extension will measure 80 by 105 feet and is estimated to cost close to $70,000. Foundations will be laid at an early date. A. R. Lindforf is president of the Pharis company.

Corduroy Tire Elects

According to the report read at the recent annual stockholders' meeting of the Corduroy Tire Co., Grand Rapids, Mich., 1925 showed the largest sales volume and the highest amount of earnings for any one year since the company was organized in 1921.

By a unanimous vote of the stockholders, the board of directors was re-elected for another year. Following the meeting the board elected the following officers: L. A. Brown, president, Clifton C. Dyer, vice president; C. S. Dickey, treasurer and general manager; M. J. Goldner, secretary, B. T. Schall, assistant treasurer.

At the meeting, Mr. Goldner gave a short talk, outlining the Corduroy line. He said that for the first time in the company's history, it was entering into a new year with ample additional facilities to meet orders at the peak of the buying season. In the absence of Mr. Brown, who is in California at the present time in the interest of the company, Mr. Dyer presided at the meeting.

May Increase Capital

W. A. Hart, secretary of the Akron Rubber Reclaiming Co., Barberton, Ohio, recently announced that the stockholders will be asked to authorize steps to double the production of the factory and increase the capital stock from $500,000 to $1,000,000. A special meeting of stockholders will be called March 4 to approve expansion plans. Officers are B. O. Etling, president and treasurer; William Welch, first vice president and sales manager; J. M. Alderfer, second vice president; W. A. Hart, secretary. The executive committee is composed of F. A. Seiberling, B. O. Etling, William Welch, J. M. Alderfer and Guy B. Wyatt. The directors are B. O. Etling, William Welch, J. M. Alderfer, J. A. Christie, C. W. Seiberling, William O'Neil, R. M. Pillmore, C. O. North and W. A. Hart.

Seiberling on Park Board

F. A. Seiberling, president of the Seiberling Rubber Co., Akron, has been named a permanent member of the metropolitan park board of Summit County for a three-year term by Probate Judge J. D. Slusser.

GOODYEAR ADDITIONS MAY BE READY MAY 1

Additions now being erected or soon to be started for the Goodyear Tire & Rubber Co., Akron, will cost $1,000,000 or over, it was announced recently by officials. Two additions to the reclaiming plant are expected to be ready May 1. Both are one-story buildings, 100 x 120 ft., and with equipment, will cost $130,000 and $60,000 respectively. Three other additions will cost $210,000. An addition started last September and now near completion will cost with equipment $750,000.

PLANTERS NOT ABLE TO FILL EXPORT ALLOWANCE

(*Special to* THE RUBBER AGE)

Latest figures of rubber shipments from Malaya strengthen the view that Eastern producers have not yet succeeded in working up to the quota of 100 per cent now exportable. After showing a progressive expansion for several months, the December exports were nearly 2,000 tons below the total for the previous month, and with the wintering season for the trees approaching, it appears unlikely that the shipment for full production sanctioned for February will be attained for some time.

Supplies coming forward, however, are sufficient to meet current demand and increase a little the low stocks in London, the reserve (at this writing) having risen to over 8,000 tons.

As expected from the marketing of produce at an average of 2s. 11¼d. (71 cents) per lb. against 1s. 1⅞d. (28 cents) per lb. in 1924, the details of exports from Britain during 1925 made a satisfactory showing from the producers' standpoint. Qualities and values of shipments to the chief consumers are as follows:—

	QUANTITY		VALUE	
	1924 Tons	1925 Tons	1924	1925
Russia	824	7,081	£120,394	£1,762,165
Germany	9,904	8,717	1,338,249	2,104,721
France	14,766	16,467	1,859,931	4,667,105
Italy	4,659	4,892	592,353	1,384,897
U. S. A.	38,600	40,032	5,080,939	10,735,221
Canada	2,395	2,010	328,694	434,252

Over the year 84,054 tons were exported from Britain, against 76,574 tons in 1924, the value being £22,307,393 ($111,836,965), compared with £10,016,332 ($50,081,660). The revival of Russian demand is especially noticeable, but the figures for other European consumers, although satisfactory, were lower than originally anticipated. The influence in this connection was the re-export of considerable quantities purchased in early summer for resale at a profit when the American demand made its influence felt in the later months.

Start Firestone Warehouse

The Firestone Tire & Rubber Co. has started work on a one-story brick warehouse 100 by 80 feet, which will be used for storing fabric. It will cost approximately $28,000.

WATER GROUND **MICA** WATER FLOATED

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KELLY-SPRINGFIELD NET PROFIT WAS $1,452,577

The annual report of the Kelly-Springfield Tire Co., New York, as of Dec. 31, 1925, showed a strong recovery, which turned a net loss of $1,525,748 in 1924 into a net profit of $1,452,577 for 1925. The remarkable recovery made by the Kelly-Springfield Co. is typical of the great improvement which took place in the rubber industry last year. The company announced that a special reserve of $1,000,000 had been set aside out of its surplus as a fund to cover fluctuations in the price of crude rubber.

Gross profit from sales was $9,895,844, against $7,255,746 in 1924, and net profit from operations was $3,461,795 against $417,233. Total profit amounted to $3,686,641 in 1925, against $717,659 in 1924. After deducting interest, amortization and miscellaneous items aggregating $2,334,064, a net profit of $1,452,577 remained, in contrast with the loss of the previous year.

The balance sheet of the company, as of Dec. 31, shows total current assets of $14,162,011, against total current liabilities of $3,568,989, a ratio of 4 to 1. In 1925, $1,000,000 of the company's ten-year 8 per cent sinking fund gold notes were redeemed at 110 and the outstanding amount of these notes has been reduced to $7,000,000.

Moore Speaks on Rubber

Fred Moore, Boston manager for the B. F. Goodrich Co., Akron, was the principal speaker at a recent meeting of the Kiwanis Club at the Hotel Kendall, Framingham, Mass. Mr. Moore's topic was "The Rubber Industry."

Sure-Foot Elects

R. J. Funkhouser was elected president of the Sure-Foot Heel & Rubber Co., Gettysburg, Pa., at a recent reorganization meeting of the company, which was purchased by Mr. Funkhouser at a receiver's sale. R. J. Bowers was elected secretary-treasurer. The following directors were elected: R. J. Funkhouser, S. E. Snyder, R. J. Bowers, H. H. Jennings and William G. Niemyer.

Rubber Boom Helps Malays

Telegraphing from Penang, Straits Settlements, the correspondent of the *Daily Mail* recently described the enormous prosperity the boom in rubber has brought the Malay Peninsula. The people of the region, he said, made £25,000,000 (about $125,000,000) more in 1925 than in 1924 out of rubber.

Of the 92,000 planters in Malaya only 2,300 are Europeans. The bulk of the rubber is produced on small estates owned by Malays or Chinese. The fact that these estates have been yielding much more rubber than is allowed exported has led to an immense smuggling business, in which the Asiastics constantly outwit the European agents and overseers. Rubber "bootlegging" is carried on to a vast extent by a rubber fleet, a counterpart of the rum running fleet off the coast of the United States.

"Rubber running," said the correspondent, is financed by wealthy persons of high standing, but it is actually done by coolies, who land their cargoes in the Dutch East Indies, from where they are sent to Singapore. If the coolies are caught their families are provided for during their term of imprisonment.

Peruvian Duty Reduced

The Peruvian export duty on rubber has been reduced from eight per cent to four per cent ad valorem. The valuation of rubber for customs purposes continues to be based on current quotations in the London and New York markets, as cabled periodically to the government by Peruvian consular officers at those points.

PARIS TO HOLD RUBBER EXHIBITION NEXT YEAR

The rubber industry on the Continent and in England is looking forward with a great deal of pleasure to the forthcoming International Rubber Exposition, which will be held in Paris in 1927. Crude rubber plantation industries will be represented by the French Colonies, the Raw Rubber Syndicate in Paris and the Planters' Association of Indochina. The French Colonial section will occupy exhibition space totaling 10,000 square feet. A space of approximately 15,000 square feet has been taken by the Syndicates of French Rubber and Cable Manufacturers, and four committees have been selected to arrange the exhibit and a program in connection with it.

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TIRES RELATIVELY LOW PRICED, SAYS MACMILLAN

J. A. MacMillan, president of the Dayton Rubber Mfg. Co., Dayton, Ohio, who is spending a vacation in Florida, said recently, "I think I am safe in saying that the price of tires today is lower in comparison than that of any other commodity. When one compares the sort of service given by the automobile tire of today with that of 13 years ago, he will find that tires now are being built to last six times as long.

"There is no immediate evidence that the price of crude rubber is likely to reach a new high point within the present year. Even if it does, it will not slow up the production of tires in this country, in spite of the many predictions being made to that effect abroad, because the United States has sufficient rubber concessions to supply our home market for a good while to come."

Mr. MacMillan added that he believed the probabilities of developing rubber plantations in the Everglades are well worthy of close attention.

THE DPG SUIT

As we go to press, the suit of the Grasselli Chemical Co. against National Aniline for infringement of the Hoffman DPG patent is being tried before Judge Hand in the U. S. District Court in New York. Full details will be published in THE RUBBER AGE as soon as they are available.

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DUTCH FORM SYNDICATE TO BUY INDIES RUBBER

A syndicate for handling Dutch East Indian rubber has been formed in Amsterdam, according to the *Nieuwe Rotterdamsche Courant*. The syndicate consists of several important rubber and tobacco shipping companies, including the Rotterdam Lloyd, Nederland Shipping Co., Royal Mail Steam Packet Co., Deli Co., the Senembah Co., and the Deli-Batavia Co. The object is the elimination of Chinese middlemen and direct dealing with native growers.

Heretofore it has been Chinese from Singapore who bought up the raw rubber and transported it in their own ships to Singapore, where it was converted into sheets and put on the market. The traffic between the Chinese buyers and native Malays, however, has been exercising a bad influence upon the latter.

The rubber boom has been a source of immense profit to them, and they have become infected with the vices of the newly rich. Their overbearing attitude has become such as to make it desirable in the interests of Dutch prestige that the trade be taken over entirely by Dutch hands.

The initial capital of the syndicate will be 1,000,000 florins (about $400,000). Two of the members of the syndicate have gone to the East Indies to investigate and report on the situation, after which a combine with a greater capital will be formed.

The plan is to buy rubber from the natives, manufacture it in the syndicate's own plants and ship it to Europe in its own bottoms, eventually becoming one of the central rubber-selling organizations.

25,973,928 Motors in Use

According to recent figures of the Department of Commerce the world had 25,973,928 automotive vehicles in operation on January 1. The figures, which were compiled from a world-wide census, show that 3,273,000 more cars are in use than in last year. Although the United States predominates in operating 19,999,436 cars, other countries are becoming more important factors. Great Britain has 1,474,573 machines in operation; France, 855,000; Canada, 727,594; Germany, 539,830; Italy, 184,700; Argentina, 181,250; Brazil, 64,950; and Russia, 18,500. Apparently the country where the automobile is least desired is Tibet, for the census disclosed only one machine there. The January 1 total for passenger cars alone was 20,799,151, against 18,578,750 the previous year.

Wooster Rubber Elects

J. D. Overholt was elected president of the Wooster Rubber Co., Wooster, O., at the annual stockholders' meeting on Jan. 14. T. E. Rice was chosen vice president; R J. Sweeney, secretary; and C. C. Gault, treasurer and manager. With these officers, the following will serve as directors: Mrs. T. E. Rice, A. L. Ebert and W. R. Roberts.

GOODYEAR SALES IN 1925, TOTALING $205,999,829, SET NEW HIGH RECORD

Net Earnings Available for Dividends Total $13,505,898 Against $12,161,540 in 1924—$7,500,000 Set Aside as Special Raw Material Reserve for Rubber

Net sales of the Goodyear Tire & Rubber Co., Akron, for the year 1925, were the best in the history of the company, both before and since the reorganization in 1921. Net business of the parent company totalled $169,470,112, against $115,323,173, exclusive of the returns of subsidiaries in California and Canada. The combined sales, including subsidiaries, aggregated $205,999,829, against $138,777,718.

After allowing for all administration, selling and general operating expenses, but before deductions for charges, the company reported earnings of $26,284,672, against $17,363,162 in 1924, while after interest charges, net profit for 1925 was $21,005,898, against $12,161,540. After appropriating $7,500,000 as a special raw material reserve, the net earnings available for dividends amounted to $13,505,898, against $12,161,540 in 1924. The company paid out $5,655.156 in dividends last year, and the profit and loss surplus on Dec. 31, 1925, amounted to $30,649,319, against $22,798,576 at the end of 1924.

The consolidated balance sheet at the close of 1925 showed current assets of $68,291,272, including $15,750,059 cash, $38,058,423 inventory and $14,482,790 accounts receivable, less reserves. Current liabilities aggregated $10,582,652, the ratio of assets to liabilities being 6.5 to 1.

Bonds Retired

Edward G. Wilmer, chairman of the board of directors, in his report to stockholders said that bonds and debentures amounting to $3,681,500 in principal amount were retired in 1925 through the regular operations of the sinking fund. On Dec. 31, the company had in its treasury $986,500 of debentures and had deposited with the trustee $2,280,000 for the call of additional debentures.

"We have already reported to you," the report said, "that the directors appropriated $3,000,000 out of the first six months' earnings as a special raw material reserve, to partially provide against a possible decline in crude rubber. In the belief that considerable shrinkage in values is still possible and that should this materialize abruptly the company should prepare itself to meet the emergency, if and when it occurs, your directors have increased the special raw material reserve to a total of $7,500,000."

Income account is as follows:

Total net sales	$205,999,829
Net sales Akron company	169,470,112
Manufacturing, selling cost, taxes	151,822,651
Total earnings before interest and charges	26,284,672
Earnings after interest	22,314,472
Total profits after charges	21,005,898
Special reserve	7,500,000
balance to surplus	13,505,898
Surplus Dec. 31, 1925	30,649,319
Total	36,304,475
Dividends	5,655,156
Surplus Dec. 31, 1924	22,798,576

Dutch Are Optimistic

The rubber situation and the prospects of rubber prices are not considered unfavorable in Dutch trade circles. The world's production of rubber in 1926 is estimated at 653,000 tons and consumption at 615,000, but it is felt that these estimates, which are English, were probably influenced by consideration of the increase in export percentages under the Stenvenson plan which began February 1.

A leading Dutch rubber executive, J. N. Berger, pointed out recently that this increase has really no significance, as 71 per cent of standard production means that most companies have reached their maximum producing capacity. This is why the outlook for prices is regarded favorably.

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BRITISH RUBBER GROWERS PLAN TO REGULATE SALES

According to a cable to the *Journal of Commerce*, a movement among British rubber growers to organize the sales side of the industry, begun in December, is now taking definite form. In view of the indications that American rubber consumers are combining for the purpose of regulating their business, the cable states, the larger producers are inclined to consider the advisability of combining for the purpose of regulating their crude rubber sales.

It is understod that Harrisons & Crossfield is considering the subject and that several growers have already reached a tacit understanding to offer resistance to any American effort to force prices down.

J. Oliver Stokes

J. Oliver Stokes, president of the Thermoid Rubber Co., Trenton, N. J., and treasurer of the Joseph Stokes Rubber Co., Trenton, died January 24 at his home in Pasadena, Cal. He had been in poor health for several years. Mr. Stokes made Trenton his home for many years, later going to New York and several years ago removing to California. It was his custom to spend a few weeks of each year in Trenton.

As a young man, Mr. Stokes went into the rubber business with his two brothers, W. J. B. Stokes and Charles E. Stokes to form the Home Rubber Co. Later he and W. J. B. Stokes organized both the Thermoid and Joseph Stokes companies, relinquishing their interests in the Home Rubber Co. to Charles E. Stokes.

Mr. Stokes was the son of the late Joseph and Sarah Stokes of Trenton. He married Miss Sarah Philips, who died years ago, and about three years ago married again. An only son, Joseph, is dead some years.

In addition to his widow and his two brothers, Mr. Stokes is survived by three sisters, Mrs. Charles Daniels, Mrs. Harry Boyer and Mrs. Minnie Royal.

RUBBER MATS FOR ENGLISH POLICE

An epidemic of coughs, colds and influenza among the point duty policemen in Birmingham, England, has resulted in the Watch Committee providing each policeman with a rubber mat so that his feet may be protected from the damp and cold.

Rhys Lewis Evans

Rhys Lewis Evans, who had been employed in the research department of the Goodyear Tire & Rubber Co., since coming to this country from Wales in 1911, died in Akron, Feb. 11 after a brief illness. Mr. Evans was widely known as the organizer and leader of the East Akron Male chorus. He was the first singer to broadcast from Akron's first broadcasting station.

Mohawk Profits Gain 69 P. C.

S. S. Miller, president of the Mohawk Rubber Co., Akron, in a recent letter to stockholders reported 1925 profits as $580,694, against $343,656 in 1924, an increase of $236,993, or 69.89 per cent. Sales in 1925 were $5,182,788, an increase of $1,769,057 over 1924, or 52.28 per cent. Percentage of profits to sales in 1925 was 11.20, against 10.06 in 1924. During 1925 the Mohawk company paid $68,223 in deferred dividends, and taxes for 1917, 1918 and 1919 amounting to $191,011. The new year was started with a practically clean slate. For new buildings, machinery and equipment $287,620 was expended in 1925, resulting in a reduction of labor and overhead factory cost of 11.5 per cent.

Present production is 1,200 tires and 1,200 tubes a day. With present equipment, this production may be increased to 1,500 tires and 2,500 tubes a day.

Mohawk Rubber Elects

J. F. Jones, sales manager of the Mohawk Rubber Co., Akron, has been elected to the board of directors of that company. Other officers and directors were reelected as follows: S. S. Miller, president; Francis Seiberling, vice president; H. H. McClockey, secretary; R. F. Bloch, treasurer; H. H. Matz, assistant treasurer; J. F. Jones, sales manager; P. H. Goodall, assistant sales manager. Directors—S. S. Miller, Francis Seiberling, J. F. Jones, M. E. Mason, R. M. Pillmore, George A. Parker, H. L. Rose and J. K. Williams.

LEAGUE OF NATIONS TO CONSIDER CRUDE PRICES

Owen D. Young, associate of Vice President Dawes in creation of the "Dawes Plan," has been tendered and will accept an invitation to participate in the preparatory session of the League of Nation's Economic Conference Commission.

His forthcoming acceptance is interpreted in Geneva as indicating that the United States will bring before the conference a demand for an investigation to break up world monopolies in certain raw materials.

The commission will meet in April to prepare the conference program. This body will be composed of one leading economist, one industrialist and one trade expert from England, France, Italy, Japan, Spain, Belgium, Uruguay, Argentina, Holland, United States, Russia, Poland, Czecho-Slovakia, Sweden, Brazil, and the International Labor Bureau will also be represented.

The experts will come as private citizens, but the League expects them to have their Governments' approval, especially as the Governments themselves will participate in the full October conference.

In these circumstances it is anticipated that Mr. Young will present America's demands relative to raw material monopolies, such, for instance, as the virtual British world control of rubber.

Arthur Witter Gilbert, Massachusetts Agricultural Commissioner, will be associated with Mr. Young, but the third American expert is yet to be chosen.

Friswell Quits Dickinson

Arthur E. Friswell recently severed his connection with the Dickinson Cord Tire Corp., Nutley, N. J. He has not yet announced his plans for the future.

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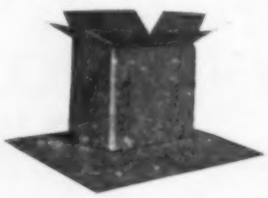

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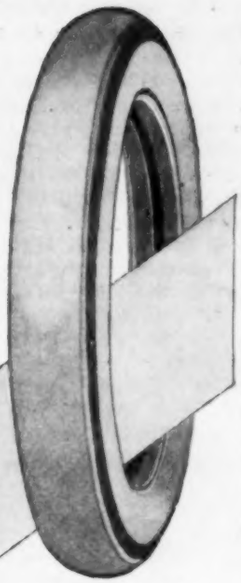

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Vulcanization DU PONT Accelerators

DU PONT GETS PATENT COVERING ACCELERATOR

It was recently announced that E. I. du Pont de Nemours & Co., Wilmington, Del., has been assigned U. S. Patent No. 1,571,739, granted February 2 to Winfield Scott, and covering the use of a new chemical compound as a rubber vulcanization accelerator, which Du Pont has been manufacturing and marketing for some time under the trade-name Vulcone.

Vulcone is prepared by the condensation of aliphatic aldehydes with aniline followed by a polymerization under rigidly controlled conditions. The final product is then blended to insure uniform physical and chemical.

The specific gravity of Vulcone is 1.15; it is practically odorless; does not attract or absorb moisture; does not decompose; does not give off obnoxious fumes while being mixed or calendered; and is not poisonous and will not cause skin rashes. It is said that it will not impart any odor to cured rubber even in the absence of zinc oxide. White or light-colored stocks are stained yellow by Vulcone and it is not therefore recommended for these stocks. Stocks containing Vulcone are not self-curing and may be stored without any more deterioration than that to which pure rubber alone is subject. Although stocks containing the accelerator possess temporary softness during mixing and calendering, this condition disappears upon cooling or mixing the rubber. Vulcone does not impart any unnatural tackiness.

RUBBER FLOORING IN LONDON TROLLEYS

A luxurious type of street car embodying many improvements has been put into service by the Metropolitan Tramways Co. in London. The most interesting innovation in these cars is that the floors are covered with rubber. Other cars are being constructed and furnished in a similar manner, and they will be put into service on various routes to test public opinion.

Goodrich Moves Branch

The B. F. Goodrich Co. recently removed its St. Louis, Mo,. branch from Garfield Ave., at Locust St. to a large five-story building at 806 Spruce St., leasing the entire building. The building is served by the tracks of the Terminal Railroad Association and occupies a lot 50 by 150 ft. According to William M. Stonestreet, branch manager, the first floor will be used for truck tires and mechanical goods. The general offices will be located on the second floor, as well as the shipping and receiving departments. The three upper floors will be used to store pneumatic tires. The building will eliminate hauling of tires from the railroad to the warehouse. All Goodrich dealers in Eastern Missouri and Southern Illinois are served by this branch which receives a carload of tires at least every other day.

FINDS MEXICO SUITED FOR GROWING RUBBER

Commercial Attaché Dye, of the American Embassy, on returning from a two months' inspection of rubber-growing possibilities in Southeastern Mexico, particularly in the States of Campeche, Chiapas and parts of Vera Cruz, declared that nature made that part of Mexico a great rubber asset. He said that climatic conditions were perfect for the rubber industry.

One handicap he found is the transportation of rubber to the coast, which must be by river to Frontera. The Port of Frontera is less than 800 miles from New Orleans in a straight line. The development of the industry would make New Orleans one of the world's great rubber markets, Mr. Dye said. It would also make Frontera an important port.

Ora Rubber to Build

The Ora Rubber Products Co., Kansas City, Mo., plans to build a new factory at Tulsa, Okla., for the manufacture of rubber flooring and kindred products. The factory is estimated to cost about $50,000, of which $30,000 will be expended for machinery and equipment.

Arbogast Joins Ohio Rubber

H. L Arbogast has left the Pharis Tire Co., Newark, Ohio, to become chemist for the Ohio Rubber & Textile Co. of Willoughby, Ohio.

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GUTTA PERCHA & RUBBER MFG. CO. IS MERGED WITH HEWITT RUBBER

John H. Kelly and Frank D. Springer, Who Own Controlling Interest in Hewitt, Announce That Gutta Percha Plant and Executives Will Soon be Moved to Buffalo

Announcement of the acquisition of the Gutta Percha & Rubber Mfg. Co., Brooklyn, N. Y., by the Hewitt Rubber Co., Buffalo, N. Y., was recently made by John H. Kelly, president of the Hewitt company. Mr. Kelly and Frank D. Springer, vice president of the Hewitt company, late last spring purchased from the estate of the late Herbert H. Hewitt the controlling interest in the Hewitt Rubber Co. and at that time planned an expansion program and soon began negotiations for the acquisition of the Gutta Percha & Rubber Mfg. Co.

Although no figures were made public as to the sum involved in the transaction, it was pointed out that the Gutta Percha company is a million dollar corporation, and that the value of its products sold annually runs into millions of dollars. Approximately 500 men have been employed in the Brooklyn plant. The executives and more skilled mechanics will go to Buffalo to continue in the Gutta Percha company's employ.

Among the products of the Gutta Percha company is Maltese Cross fire hose, a standard in many municipal departments, and numerous other products of quality. Some of the most valuable patents of the entire rubber industry, dating back as far as fifty years, were issued to the Gutta Percha company.

The official announcement of the closing of the big deal as sent out to the trade by the Gutta Percha company reads, in part, as follows:

"For some time this company has felt the need of manufacturing facilities which could not be provided in our Brooklyn factory.

"We are now happy to announce that several month's negotiations have been terminated, under which our financial interests have been merged with the Hewitt company and future manufacture of our products will be carried on at the Hewitt factory.

"Under this arrangement our production will be continued as a separate, independent entity, and we will have immediately available more space and better facilities than we have ever enjoyed, as well as opportunity for further growth, which we lacked at Brooklyn.

"Effective, immediately, therefore, the personnel of this company executive and production, which has been responsible for the maintenance of standards of qualities and brands, will continue their services at Buffalo. Executive offices will be maintained temporarily at Brooklyn, and later moved. No changes in branch or sales organizations will be made other than such additions as may be necessitated by expansion plans."

The Growth of Gutta Percha

The story of the growth and development of the Gutta Percha company reads like a romance. In the 50's of last century gutta percha ornaments became very popular in this country. The possibilities of crude rubber were known at that time. An enterprising firm of New York manufacturing jewelers, Warren and Spadone, anxious to meet this demand, began producing these gutta percha ornaments in a small way. Their business in the new department grew so rapidly, and their discoveries in the rubber industry were so remarkable, that the manufacture of jewelry was discontinued and the growth of the new industry carried on.

About 1880 the Gutta Percha & Rubber Mfg. Co. opened a Canadian branch in Toronto, which in 1887 was reorganized into a Canadian subsidiary company with the controlling interest owned

(Continued on Next Page)

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THE DEFIANCE RUBBER CO.
Defiance, Ohio

GUTTA PERCHA MERGED WITH HEWITT RUBBER

(Continued from Page 343)

in Canada. Shortly thereafter these interests bought the remaining American stock. The entire capital stock has been owned by Canadians for over a quarter of a century and the company is an all-Canadian company in every sense of the word, having no connection with the American Gutta Percha & Rubber Mfg. Co. By 1912 the business had outgrown its original capital structure. It was then reorganized and recapitalized as Gutta Percha & Rubber, Ltd., its present title. The head office and factories are located in Toronto. It has branches from coast to coast and a subsidiary company in England—Gutta Percha & Rubber (London) Ltd. The company is one of the foremost industrial enterprises in Canada.

With the acquisition of Gutta Percha & Rubber Mfg. Co. by Hewitt, Buffalo approaches a leading position in rubber production. When the Gutta Percha company is in full operation and when production at the Dunlop Tire & Rubber Corp. factory reaches proportions planned, Buffalo, it is said, will rank second only to Akron, Ohio, as the nation's rubber center.

The engineers of the Dunlop Rubber Co. of England selected Buffalo for their American factory after comparing the advantages of the city with those of every other producing center. Then the Tucker Rubber Corp. located in Buffalo.

The Gutta Percha & Rubber Mfg. Co., which will soon be moved to Buffalo, has a world-wide reputation for the quality of its products, many of its specialities being used by the largest United States mining, steel and oil companies. The company maintains branches or agencies in New York, Boston, Philadelphia, Baltimore, Atlanta, Chicago, Pittsburgh, Salt Lake, Denver, Los Angeles, San Francisco and Seattle.

It was later announced by the Hewitt company that Frank E. Miller, vice president of Gutta Percha & Rubber Mfg. Co., will be made president on its removal to Buffalo. Amedee Spadone, also vice president, will retain his title. John H. Kelly, president of the Hewitt company, and Frank D. Springer, vice president, become members of the board of the Gutta Percha company.

To Transplant Seedlings

The Intercontinental Rubber Co. recently announced that preparations are being made for the first transplanting of guayule seedlings on 200 acres of selected land in California. The guayule shrub is said to be the only rubber plant in commercial quantities capable of withstanding frost, a necessary characteristic for its cultivation in northern latitudes. The Intercontinental Rubber Co. plans to continue to promote cultivation of guayule in America wherever climatic conditions are favorable. Seed beds will be prepared this year for planting additional acreage in 1927.

INCREASE IN PRODUCTION IS FORECAST BY BRITISH

Referring to the near approach of the annual surveys of the rubber situation by leading London rubber firms, the *Daily Mail* says it is believed some of them will put the world's consumption for 1925 at 560,000 tons and estimate the production for 1926 as 630,000 tons.

On this assumption, says the *Daily Mail*, there is room for a 12½ per cent increase in consumption this year before production is overtaken. The American movement for economy in the use of tires should not be overlooked, it adds.

This estimate, generally speaking, says the newspaper, seems to indicate that although prices still may give handsome profits to producing companies there will be no serious shortage of rubber.

A Reuter dispatch from Batavia, Java, says provisional estimates show an increase of 50 per cent in the native rubber production for 1925. This gives a total of 129,700 tons gross or 84,000 tons net, as against 104,000 tons of estate rubber, which has increased only 15 per cent.

Heatless Changes Name

The Heatless Dental Rubber Corp., New York, recently filed a certificate in the office of the Secretary of State changing its corporate title to the Martin Rubber Co., Inc. Robert A. Pines, 44 Court St., Brooklyn, is attorney for the corporation.

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HOWARD DEFENDS BRITISH RUBBER POLICY AND IS ANSWERED BY TILSON

British Ambassador Says Restriction Act Helps Consumers as Well as Planters—Tilson Declares Peak Prices Were 400 Per Cent Over Cost of Production

Speaking before the Advertising Club in New York on January 23, Sir Esme Howard, British Ambassador, said that there were no mergers of rubber plantations in British territory authorized and no monopolies of any kind were encouraged. He claimed that the price of crude rubber was in no way discriminatory or aimed at the American consumer, and made an appeal to both sides not to allow hard-speaking to embitter the controversy. He traced his connection with the diplomatic service and told how he became acquainted with a large rubber manufacturer. He said that the rubber consumer owes a debt of gratitude to planters who risked time and money, as he did, when the business was in an experimental stage, as without their foresight he would be paying infinitely more for rubber products.

"Confirm American Contention"

John Q. Tilson, majority leader of the House of Representatives, declared January 24 that the remarks of Sir Esme confirmed the contention of American manufacturers that a rubber monopoly has been created by the British which properly was the subject of international debate and investigation. He said that the peak price was 400 per cent over the admitted cost of crude rubber production.

Sir Esme Howard's complete address is published below:

"I refer to that most useful material known as rubber," he began, "especially provided, one would suppose, by nature to ward off inconvenient and unpleasant shocks, but which latterly seems to have lost this pleasant quality, and to be charged with an all too electric shock creating power.

"And in this connection I should like to give you a little personal history. About thirty years ago I left the diplomatic service and wished to enter the House of Commons, but not being largely blessed with this world's goods, I thought I might try to add to my slender store.

"It so happened that, at that time, I made friends with the manager of the greatest rubber manufacturing firm in London, and from conversations with him I became convinced that the demand for rubber would in a few years outrun the supply. I was also sentimentally interested in the West Indian Islands, and therefore I determined to try to kill three birds with one stone, to help by experimental plantation to meet the world's demand for rubber which was bound to come, to assist the West Indies back to prosperity, and also to provide myself with the funds necessary for an independent political career. I can say I took no chances.

"I traveled for two years, at my own expense, in the Amazons and in Mexico and the West Indies, accompanied by a botanist who has since risen to eminence in the University of Cambridge. Well, in spite of that, to make a long story short, we planted the wrong kind of rubber tree in the West Indies, and after waiting for over ten years to see if the tree we planted, the Castilloa elastica of Mexico and Central America, would bear productively in plantations, we found it would not, and were obliged to cut them all down. I lost my time and my money and what was worse, the money of my friends who had joined me in the venture.

POINTS MORAL OF HIS STORY

"I saw the other day in a paper that when the word 'rubber' was mentioned, an Englishman's expression was like that of a cat caught by the empty cream jug, or the empty canary cage. You will understand that the word rubber does not produce that particular kind of satisfaction in my soul. But the moral of all this story is this:

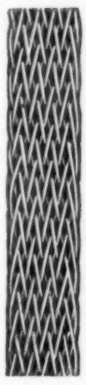
"A few years after I began planting rubber the prices began to soar up so that before the century closed they went up well over two dollars. In the meantime other people had the same idea, only they planted in other parts of the world, mainly Ceylon and what are called the Straits Settlements in the Malay Peninsula; and for the most part they planted another tree, the Hevea brasiliensis, which, unlike the Castilloa elastica, did well when planted and produced rubber latex freely. The result was that the price of rubber went down steadily until the war came and sent all prices up for the time being.

"Prices, however, dropped again after the war to a point at which it was no longer profitable to work certain of the plantations, and unless something could be done to save many of them they would have gone out of cultivation.

"This would have caused prices to rise again automatically by naturally restricting the output, and doing so in such a way that it would have been impossible to meet at once an immediate and urgent demand, while at the same time ruining a number of people who had invested their money in planting. It was literally a case with many plantations of 'To be or not to be'—aye, there's the rubber!

"The Governments of Malaya and Ceylon then took the matter up, and after having failed to

(Continued on Next Page)



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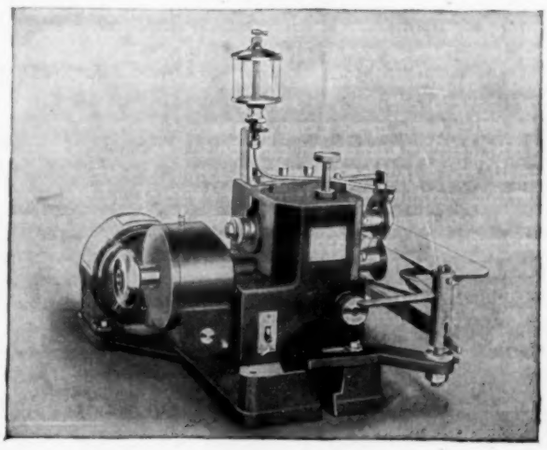

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DEFENDS THE BRITISH CRUDE RUBBER POLICY

(Continued from Page 347)

induce the estate owners to get together and agree upon voluntary restriction passed a law which limited the exportation of crude rubber, in such a way, however, that the shipments of rubber should be increased as prices rose.

"The machinery created by this law was absolutely automatic, and it is quite accurate to say that, since the price on the consuming markets provided the only lever by which it worked, its operation was placed, not in the hands of either the growers or the Governments, but in the hands of the consumers in this and other countries.

"There were no mergers of plantations authorized and no monopolies of any kind were created or encouraged. A very large proportion of the production of rubber in British territory was, and is, in the hands of small planters of very moderate means. Had those small plantations been allowed to revert to the jungle, what would the situation have been today? Much worse, I venture to think, than it is. Those plantations were saved by the restriction acts.

"New planting was encouraged which would otherwise not have been undertaken, and though for a time prices have undoubtedly exceeded what might be termed a rate of reasonable profit, yet, as I say, the plantations were saved and the possibility of immediately increasing the output, as and when prices rose up to or above the fair profit producing level, was secured.

"Though we may all admit that the restrictions might perhaps have been more rapidly removed, we should, I think, also admit that the increase in demand was phenomenal and unexpected, and that in the long run the Stevenson act, as it is called, was for the benefit not only of the planters but also of the consumers.

LONG WAIT FOR RETURNS

"And this further admission I think should in fairness be made that but for these same planters who risked their time and their money, as I did, when the whole business was in a purely experimental stage, and knew they would have to wait at least ten years for their returns, a prospect that does not appeal to the ordinary investor, prices might now be at $3, $4 or $5 a pound, if the consumer had to rely on wild rubber.

"I really think that taking all things into account the consumer owes some debt of gratitude to these pioneers, without whose foresight he would now undoubtedly be paying infinitely more, with no prospect of an early reduction when restrictions are removed and 100 per cent of standard production is released on Feb. 1.

"Further, I should like to say this to clear up a point which the American public does not seem to understand. Although prices for crude rubber touched exceedingly high levels for a few months last year, the average price for the whole year was only about 73 cents a pound, and the average for the past five years has been only about 32 or 33 cents.

"Neither the Government of Great Britain nor that of the Straits Settlement gets anything out of it except so far as increased prosperity increases revenue derived from ordinary taxation. Further, it is in no way discriminatory nor aimed at the American consumer, for the British consumer all over the world pays just as much as the American, and, incidentally, seems to be objecting to doing so.

"In these circumstances I hope you will agree with me that the words 'extortion,' 'hold-ups,' 'gouging,' etc., which have been frequently used in this connection, are, to put it mildly, as Mark Twain said of the reports of his own death, perhaps a trifle exaggerated. If, to quote an old English proverb, 'soft words butter no parsnips,' neither are hard words milch cows from which we extract the milk of human kindness.

AN EXCEPTIONAL MONOPOLY

"I am quite willing to agree that monopolies in raw materials exercised by Government action are, generally speaking, a misfortune, and likely to lead to international friction; but there may be cases which are exceptions and require exceptional treatment. There may be times when the Government may have to legalize arrangements which are not strictly in conformity with economic law, in order to save an industry temporarily threatened, which is of importance, not only to the country of that industry, but also ultimately to the world at large.

"I confess I have not gone deeply into this rubber matter, but I feel convinced that, unless the situation had not been really very serious for the plantations and for the Straits Settlements, which depend to a great extent on the plantations, the British Government would not have consented to a policy which is at variance with its usual methods and practice.

And so the moral I would draw for both our countries over this pother about rubber, which I believe will be happily forgotten very shortly, is this: When causes of friction arise between us, as they are sure to arise from time to time, since that is only human, let us try, before using strong language to each other, before imputing to each other all sorts of unworthy motives, to examine as impartially as we can all the reasons at the back of the action under dispute. Then if we have criticisms to make let us make them by all means, but as friends to friends and without creating unnecessary bitterness.

"Critics of America in Great Britain have often been in the past as disagreeable as critics in America of Great Britain, and if I have ventured here to appeal to both in the interests of good understanding I hope my temerity may be excused, and that nothing I have said will be taken as impertinent interference."

Representative Tilson's Statement

In the statement he made on January 24, Representative John Q. Tilson stoutly defended the official and unofficial protests which have been made by Secretary of Commerce Hoover and representatives of the American rubber industry before the House Committee which recently closed an inquiry into the alleged British crude rubber monopoly. Mr. Tilson's statement was the result of the remarks of Sir Esme Howard made the previous day before the Advertising Club of New York.

Mr. Tilson stated that, although increased exports of rubber after February 1, had been provided for by the British, the price of crude rubber still remained far above the cost of production. He also challenged the statement by Sir Esme that action had been necessary to save the British plantation industry from disaster caused by the business slump of 1920 and quoted an article from *The London Daily Telegraph* of Jan. 15, 1923 which said that practically all of the producing companies were then working at a profit.

The complete statement of Mr. Tilson is published below:

"I welcome the British Ambassador's defense of his Government's action in establishing a monopoly in crude rubber and thereby lifting prices to present levels, because we can only clear these matters by frank discussion. Sir Esmo properly discusses the matter from the viewpoint of the consumer. Our mutual difficulty is also confirmed, that when Governments enter the commodity business, the prices, the conditions and the conduct of such business become matters of debate between nations instead of between merchants, and as he says, 'I am willing to agree that monopolies in raw materials exercised by Government action are, generally speaking, a misfortune and likely to lead to international friction.'

"We are considering not only these and other phases of the rubber monopoly, but also similar Government monopolies in eight other raw materials, all of which are bound to create such national friction. Also the high success of the rubber control seems to be stimulating other Governments to the same action in other materials, with more friction in prospect. That international friction would grow out of the British rubber monopoly was amply anticipated in Great Britain when it was first proposed.

"The British Rubber Manufacturers' Association in October, 1922, protested against 'the very serious precedent which has been created by the Stephenson report': Has the Colonial Office considered the outcome of the restrictions as between the United States and the United Kingdom? At the command of the British Government the export of raw rubber is to be curtailed in the areas in question. America will be mulcted of many millions of pounds consequent on this action. Legislative restriction of the output of rubber may be responsible for the initiation of a vicious circle of restrictions of raw materials to our industries. It is an innovation by what we consider a not unimpartial committee (six growers and Government officials and one consumer), of so extremely dangerous a character that both British and American manufacturers will be forced to combat these proposals.' "

"The Manchester Guardian of Oct. 12, 1922, in discussing the proposed monopoly, said:

" 'Governments are not qualified to dabble in such subjects and when they attempt it they are apt to fall into the hands of people whose interests are opposed to those of the public * * * the intervention of legislators to secure them creates a precedent which it would have been much better to avoid. If such things can be done for the rubber industry, it may be well asked why others should not be similarly treated.'

"Sir Esme rightly states that the British consumers are treated to the same prices as ours and also that they are complaining about it. It is desirable to recall that the United Kingdom consumes 12 per cent of the world's rubber, while we consume 75 per cent, therefore, there is not wholly an equality in the burden. The fact that her citizens are complaining would seem to confirm the complaints from this side.

"The Ambassador, like many others, seems to have been misled into the belief that the monopoly has been abandoned by the announcement that the release of export restrictions will be 100 per cent on Feb. 1. The hearings before our committee proved that the real production is from 115 to 125 per cent on the scale used, and that from 15 per cent to 25 per cent restriction is still in force after Feb. 1.

RESTRICTIONS MAINTAIN PRICES

"It was shown that if the restrictions were to be entirely withdrawn the prices would drop still further and, therefore, the continued restrictions must be for the purposes of further upholding of price and continuing the monopoly. It is interesting to note that the increased exports on Feb. 1 were announced after the American consumers' protests, and while this has contributed to reduce the price, yet it is still 400 per cent over the cost of production which was shown to be about 17 cents per pound."

"Sir Esme considers the action of his Government as having been necessary to save the industry from disaster caused by the world's slump in 1920. This was denied before our committee, and it is interesting to note the following statement from The London Daily Telegraph of Jan. 15, 1923, written before the monopoly got its prices into action and after the slump had passed:

" 'Speaking generally, the cost of producing rubber has been so surprisingly reduced that within the present price of over 1 shilling 3 pence (30 cents) per pound for the commodity, practically all the companies are now working at a profit.

" 'There can be few industries that have come through the world depression with so little loss as the rubber industry. Not a single rubber company has disappeared and there have been fewer appeals for capital and less numerous reconstructions than in other industries of equal magnitude.'

COMPARES RUBBER TO COTTON

"The evidence before our committee shows that while the rubber industry was coming so successfully through the world slump our own farmers were going bankrupt right and left selling their product to Great Britain for less than cost. It was also shown that the cost of producing cotton is about the same as rubber, and I have no doubt of the volume of international friction if our Government had fixed the price of cotton at $1 or even 72 cents.

"The Ambassador's statement seems to justify the present prices of 72 cents per pound as reasonable—or the average price of $1 per pound which preceded American action in reducing consumption and taking steps to procure supplies from elsewhere. I may mention that the law creating the monopoly implies that a fair price was to be 36 cents a pound—upon which it has been conceded that the growers receive 15 to 25 per cent profit."

"The law itself provides an increase or decrease of restrictions on production above and below this price. Moreover, the hearings before our committee show amply that the representatives of the British Planters' Committee repeatedly gave assurances, both to the British and American consumers, that 36 cents was a fair price and was all they desired.

"Every 33 cents above this price means $300,000,000 annually to the American consumer on our rate of imports, and when our investigation began it was twice 33 cents above the 'fair' price. This does not seem to be very consistent with the notion that prices are even yet very reasonable.

"The main points still outstanding are.

"1. The monopoly continues to restrict production.

"2. Prices are still unreasonable.

"3. International friction has grown out of it.

"4 American consumers must further restrict their consumption.

"5. Other governmental monopolies have already apparently grown out of this precedent and its high profits, and old ones are being reinvigorated.

"6. Still others are probable.

"7. We are still confronted with nine such monopolies and still debating the principle as to whether the Governments of the world are to take the international trade in raw materials out of the control of producers and consumers and to fix arbitrarily whatever prices their producers or speculators may decide upon.

"We have in mind the consideration of this question as consumers, the problems which confront the buyer, the action that we must take in our own protection. We do not in any way wish to criticize the action of the British Government, but we cannot find our solution without analyzing the methods and results of the governmental monopoly itself."

1925 RUBBER GOODS EXPORTS, VALUED AT $52,633,127, INCREASE 29 PER CENT

Preliminary Returns to Rubber Division Show Gain of 29.6 Per Cent Over 1924 Total of $40,621,595—Increase is Said to be Partly the Result of Higher Prices

American exports of rubber products to foreign countries in 1925, according to the Rubber Division of the Bureau of Foreign and Domestic Commerce, were valued at $52,633,127 on the basis of preliminary returns, an increase of 29.6 per cent over the 1924 official total of $40,621,595, which was in turn an increase of 9.9 per cent over the 1923 total of $36,972,170. About one-fourth of the 1925 increase is a result of increased prices on certain lines, caused by higher prices of raw materials since the middle of the year; at least three-fourths of the increase represents increased volume of business.

Records Set for 17 Classes

During 1925 new monthly records were set for exports of 17 of the 26 separate classes of rubber products shown in the official export statistics; for some classes new records were set twice or three times during the year. The 1925 volume of exports of automobile casings, inner tubes, solid tires, tire repair materials, rubber boots, canvas rubber-soled shoes, rubber heels and soles, rubber belting, hose, packing, thread, druggists' rubber sundries, and rubber toys is greater than for any previous year for which quantity figures have been officially compiled. Exports of scrap and reclaimed rubber were heavier than for any of the preceding three years, although this trade was not very heavy in the closing months of 1925.

In addition to the exports to foreign countries, rubber manufactures shipped to non-contiguous territories in 1925 were valued at $3,426,575, a slight increase over the 1924 total of $3,385,502. These exports consisted chiefly of automobile tires, rubber footwear, and mechanical rubber goods.

The outlook for the rubber goods export trade in 1926 is on the whole optimistic. Increasing use of motor vehicles in foreign countries normally calls for an increasing number of tires. It is estimated that tire exports from the United States, France, Great Britain, Canada, Italy, Germany, Belgium, and Japan during 1925 numbered about 6,400,000, and the normal demand for 1926 will exceed 8,000,000 unless higher prices cause a sharp decline in consumer buying throughout the world. The average value per automobile casing exported in December, 1925, was $15.74 as compared to $12.00 for the year 1924, for inner tubes $2.66 as compared to $1.83 and for solid tires for trucks $35.18 in December, 1925, as compared to $26.20 for the year 1924.

Increasing industrial activity caused a greater volume of world trade in rubber belting, hose, and packing during 1925 than in either of the two preceding years, and 1926 looks like another very good year for this line of trade. There has been a steady growth in the export trade in rubber footwear each year since 1921, according to a Rubber Division survey of footwear exports from the chief manufacturing countries including the United States, Canada, United Kingdom, Germany, France, Austria and Sweden; the 1926 trade in this line should equal the 1925 volume. Improved economic conditions in almost every important foreign country make for an increased trade in rubber specialities of all kinds.

American rubber manufacturers are alive to the possibilities of export trade. They are constantly giving increased attention to foreign markets, and will be certain to continue to supply their share of the export demand. The quality of American rubber products is steadily gaining recognition throughout the world, and a constantly growing stream of inquiries for American lines is the natural result.

TO ABOLISH RESTRICTION IF SHORTAGE CONTINUES

(*Special to* THE RUBBER AGE)

In reply to questions asked in the House of Commons recently, the Hon. W. G. A. Ormsby-Gore, Under-Secretary for the Colonies, said that he considered the price of rubber was likely to come down very considerably, that the abolition of the restriction scheme would not assist such a movement, but that if there should appear to be a real scarcity during the next few months, it would be possible to abolish the restriction scheme.

Apparently this reply, the logic of which is not very easy to follow, means that the committee upon whose advice the Colonial Office relies, is not in favor of the abolition or modification of restriction.

On the day previous to making the above statement Mr. Ormsby Gore made a statement which, says the *London Times*, "must read strangely to those who have followed the operation of the scheme."

The paper continues: "He said that the restrictive legislation was framed to control the export of rubber, and did not restrict the production. As a definition of the provisions of the legislation this is perfectly accurate.

"Under the scheme, a minimum export duty is levied on that percentage of standard production (which is the actual production of each producer for the 12 months ended October 31, 1920) which is allowed to be exported, and which is varied from time to time. The minimum duty is 1d. per lb. At the same time, a producer is at liberty to export a greater quantity than the permitted percentage on the payment of a higher rate of duty on his total exports, the maximum duty being 1s. per lb. on unlimited exports. In actual operation, the scheme has reduced both the production and exports from Malaya and stimulated exports from non-restricting areas. Under present conditions, therefore, the restriction scheme operates really as a restriction of profits scheme, for if producers exported to the limit of their productive capacity they would make much less profit than companies operating in non-restricting areas. Of course, it can be contended that if they all produced and exported to the limit of their capacity the price of rubber would fall. But if restriction was abolished, and the price fell 1s., the companies would be better off, since they would not have to pay the heavy tax they have to pay now, while their costs would be reduced."

Coolies Seek Rubber Pay

Employers of labor in Java are complaining because the higher wages paid by the Sumatra rubber plantations are drawing workers from the island by the thousand. Steamers which left recently for Sumatra were besieged by Javanese coolies, who refused local work because they said they could earn five times as much on rubber estates.

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LONDON BROKERS SEE NO SHORTAGE IN 1926

(*Special to* THE RUBBER AGE)

Sanderson & Co., the well-known London rubber brokers, in their latest circular state that shipments of rubber from the Straits Settlements and Malaya during December showed no material increase on the previous month, the total being 33,140 tons, against 32,853 tons in November. Of this quantity, 5,310 tons were shipped to the United Kingdom and 24,790 to the United States, whereas in November 7,220 tons were shipped to London and 21,683 tons to the United States.

"As regards prospects for 1926," the report states, "we are faced with an increase in supply which may be counterbalanced by a progressive increase in consumption. It is strongly recommended that American motorists should adopt the practice of patching their worn or semi-worn-out tires, and manufacturers are implored to degrade the quality of their tires by the use of inferior materials. This would certainly diminish the population of the United States, and to that extent would tend to curtail consumption in America during 1926, and a total world consumption of 600,000 tons as a minimum is looked for.

"It is considered that the world production will reach 630,000 tons minimum. This would leave a slight surplus to replenish the dangerously low world stocks and to save the trade from having to face the 1927 crop, which is not likely to exceed greatly the 1926 crop, with bare cupboards, with an almost certainly larger consumption facing them.

"Therefore, it appears the prospect of actual shortage is more to be feared in 1927 than in 1926, and those producers who have been selling their outputs forward at 1s. (25 cents) discount on the price ruling for 1926 may eventually be in the position of the gentleman who sold his birthright for a mess of pottage."

Alhambra Again Producing

The Alhambra Rubber Co., now located temporarily at the S. A. Eastman box factory, Milford, Mass., is handling a lively production with a dozen or more machines in operation. Shipments of rubber coats are being made daily, and officials say that the demand for their products is excellent. The factory formerly occupied by the Alhambra company was gutted by fire last December and has not been repaired as yet, because insurance claims have not been finally adjusted. The company may negotiate to buy the factory from W. E. Cheney, the owner.

Pioneer Reports Profits

Profits from 1925 operations of the Pioneer Rubber Co., Willard, Ohio, were over $100,000 after all deductions, and a surplus of $85,000 is carried forward, it was shown by the financial statement handed out to stockholders at the annual meeting, January 19. The cash balance of $27,583.45, accounts receivable $66,915.08 and inventory $55,564.67, gave a total of $150,063.20 of quick assets, as against an indebtedness of $64,745.73, represented by $22,196.93 in accounts payable, $31,000 in notes payable and $11,548.80 in trade acceptances, a balance of $85,000 in excess of all debts.

The stockholders reelected the board of directors as follows: J. C. Gibson, T. W. Beelman, W. R. Richards, R. K. Williams and K. L. Milligan. Immediately following the stockholders' meeting the directors met and reelected T. W. Beelman, president; J. C. Gibson, vice president and general manager; and R. K. Williams, secretary. K. L. Milligan was reappointed assistant sales manager.

Prospects are bright for dividend payments in 1926, Mr. Beelman told the stockholders. The company was said to be in the best financial condition in its history.

PROPOSE NEW NAME FOR BOSTON ORGANIZATION

Rubber men in the Boston district held an informal dinner at the Boston Yacht Club January 27 to discuss the formation of the contemplated Wales-Goodyear Rubber Club and to hear the illustrated lecture by Quincy Tucker on the rubber resources of Brazil, Bolivia, British and Dutch Guiana. It was pointed out that it could not be forgotten that the club was in honor of the two founders of the American rubber industry, Thomas C. Wales and Charles Goodyear, and therefore it would be better to give the new organization a broader name. It was proposed to call the club the "New England Rubber Association".

It is expected that another meeting will be held in the near future.

TIRE & RIM ASSOCIATION REPORT FOR THE YEARS 1920 to 1925 INCLUSIVE

The Tire & Rim Association, 1402 Guarantee Title Bldg., Cleveland, recently issued a summary of the rims approved and rejected for the years 1920 to 1925 inclusive. 25,997,849 rims were approved last year.

	1920	1921	1922
Total No. Rims Inspected	15,426,320	10,860,046	17,789,381
Total No. Rims Approved	12,860,724	9,175,039	16,281,583
Number Rims Rejected	2,565,596	1,685,007	1,507,798
	1923	1924	1925
Clincher Rims Inspected	17,089,970	12,755,518	6,656,681
Clincher Rims Rejected	2,278,325	1,416,536	709,611
Clincher Rims Approved	14,811,645	11,338,982	5,947,070
Straight Side Rims Approved	8,330,317	10,524,833	20,050,779
Total Rims Approved	23,141,962	21,863,815	25,997,849

Rims approved and branded by the Association are classified in sizes as follows:

	1920		1921		1922		1923		1924		1925	
SIZE	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
26x2½ CL	....	0.0	1,157	0.0	....	..	....	..	....	..	....	..
24x3 CL	1,739	..	....	..	....	..	....	..	2,679	..	15,439	0.1
26x3 CL	69,572	0.5	12,629	0.1	16,730	0.1	36,863	0.1	60,352	0.3	95,200	0.4
28x3 CL	119,317	0.9	26,902	0.3	26,902	0.3	73,680	0.3	25,343	0.1	4,105	0.0
30x3 CL	1,365,757	10.6	532,034	5.8	532,034	5.8	1,009,856	4.4	601,517	2.9	212,043	0.8
30x3½ CL	5,634,663	43.8	5,588,656	60.9	5,588,656	60.9	11,204,235	48.4	9,675,744	44.4	4,997,398	19.2
31x4 CL	....	..	....	..	....	..	1,594,862	6.9	848,610	3.9	622,885	2.4
25x3½ SS	....	..	....	..	....	..	....	..	645	0.0	2,570	0.0
27x3½ SS	....	..	....	..	....	..	33,381	0.1	3,582	0.0	2,783	0.0
28x3½ SS	....	..	....	..	....	..	14,070	0.1	1,050,904	4.8	8,643,472	33.3
29x3½ SS	....	..	....	..	....	..	....	..	64,189	0.3	144,390	0.6
30x3½ SS	....	..	172,238	1.8	1,632,809	10.0	3,403,190	14.7	2,580,146	11.3	616,683	2.4
32x3½ SS	1,183,251	9.2	323,784	3.5	186,937	1.1	143,575	0.6	64,577	0.3	26,514	0.1
28x4 SS	....	..	....	..	....	..	17,048	0.1	949,671	4.4	2,946,938	11.3
28x4 AP	....	..	....	..	....	..	703	0.0	45	0.0	....	..
29x4 SS	....	..	....	..	....	..	2,126	0.0	717,284	3.3	1,629,874	6.3
30x4 SS	....	..	....	..	....	..	41	0.0	324,000	1.5	289,753	1.1
31x4 SS	....	..	....	..	4,319	0.0	109,705	0.5	28,879	0.1	1,515	0.0
32x4 SS	1,311,244	10.2	1,216,475	13.7	3,041,559	18.7	3,014,093	13.0	1,370,681	6.3	316,147	1.2
33x4 SS	1,041,652	8.2	487,206	5.3	411,621	2.5	211,437	1.0	112,106	0.5	27,214	0.1
34x4 SS	127,584	1.0	32,041	.0.3	59,696	0.4	20,438	0.1	2,690	0.0	759	0.0
29x4½ SS	....	..	....	..	5,410	0.0	67,919	0.3	353,514	1.6	551,720	2.1
30x4½ SS	....	..	....	..	....	..	478	0.0	569,574	2.7	1,628,419	6.3
31x4½ SS	....	..	....	..	....	..	67	0.0	232,750	1.1	251,259	1.0
32x4½ SS	624,473	5.0	326,412	3 5	1,065,220	6.6	1,438,610	6.2	1,318,609	6.0	637,800	2.4
33x4½ SS	874	0.0	....	..	79,787	0.5	80,892	0.4	2,629	0.0	1,854	0.0
34x4½ SS	878,097	6.8	346,254	3.7	458,478	2.8	466,438	2.1	212,158	1.0	96,924	0.4
36x4½ SS	38,601	0.3	8,323	0.1	11,265	0.1	4,559	0.0	1,995	0.0	154	0.0
30x5 SS	....	..	....	..	....	..	....	..	155,245	0.7	402,899	1.6
31x5 SS	....	..	....	..	....	..	23	0.0	169,978	0.8	464,143	1.8
33x6 SS	....	..	....	..	....	..	....	..	10,914	0.0	109,107	0.4
30x5 Trk.	....	..	....	..	508	0.0	5,548	0.0	146,888	0.7	840,768	3.2
31x5 Trk.	....	..	....	0.5	....	..	....	..	50	0.0	....	..
34x5 Trk.	43,463	0.3	48,637	..	112,234	0.6	141,278	0.6	110,185	0.5	109,871	0.4
32x6 Trk.	....	..	....	..	676	0.0	5,597	0.0	32,441	0.2	162,050	0.6
36x6 Trk.	123,659	1.0	2,928	0.0	11,906	0.1	22,750	0.1	31,934	0.1	75,309	0.3
34x7 Trk.	....	..	....	..	282	0.0	2,084	0.0	5,914	0.0	22,612	0.1
38x7 Trk.	48,603	0.4	1,151	0.0	8,102	0.0	5,407	0.0	8,881	0.0	8,591	0.0
36x8 Trk.	....	..	....	..	353	0.0	3,019	0.0	1,981	0.0	10,904	0.0
40x8 Trk.	38,182	0.3	1,127	0.0	4,795	0.0	6,442	0.0	5,122	0.0	16,174	0.1
44x10 Trk.	2,431	0.0	190	0.0	....	..	....	..	....	..	1,523	0.0
Millimeters	191,394	1.5	1,895	0.0	6,755	0.0	909	0.0	....	..	....	..
Total	12,862,556	..	9,175,039	..	16,297,785	..	23,141,968	..	21,863,815	..	25,997,849	100.0

KEY:—"Ap" Airplane; "SS" Straightside; "Cl" Clincher. NOTE:—Supervisory inspection on all straightside rims started June 1, 1922. Since that date all rejections are clincher rims.

RUBBER ASSOCIATION URGES ROADS TO ADOPT UNIFORM HOSE SPECIFICATIONS

Study Shows that 19 Representative Railroads Specify 301 Different Constructions for Water, Air, Steam and Tank Hose —Ask Adoption of A. R. A. "Recommended Practice"

As a result of a study recently completed by the Mechanical Rubber Goods Manufacturers Division of the Rubber Association of America, which showed that 19 representative railroads issued specifications covering water, air, steam and tank hose requiring 301 different constructions, the Division has started a campaign for the adoption of the American Railway Association "Recommended Practice" Specifications. Letters were recently sent to purchasing agents, superintendents of motive power, mechanical engineers and engineers of tests of 40 railroads who buy hose by specification. Many railroads do not issue specifications but buy brand hose.

95 Constructions of Water Hose

The study revealed that water hose alone is required in 95 different constructions. Eighteen of the 19 roads purchase water hose in 15 sizes. The A. R. A. provides for 11 sizes and constructions, leaving 84 extra constructions; on the basis of 15 sizes, leaving 80 extra constructions. Braided air hose is purchased by 10 roads in eight sizes and 37 different constructions. The A. R. A. standard covers 7 sizes and constructions, leaving 30 extra constructions. If the A. R. A. standards were made to embrace eight sizes there would be 29 extra constructions. Wrapped air hose is purchased by 14 of the 19 roads in 12 sizes, 53 different constructions. The A. R. A. standard covers 7 sizes and constructions. These 14 roads use only four of the A. R. A. standards, thus leaving 49 extra constructions. If the A. R. A. standards included the 12 sizes, there would be 41 extra constructions.

Long length steam hose is required by 19 roads in a range of 13 sizes, 54 different constructions. The A. R. A. standard covers eight sizes and constructions. These 19 roads use only seven of the A. R. A. standard constructions, thus leaving 47 extra constructions; on the basis of 13 sizes, leaving 42 extra constructions. Steam heat hose is required by 19 roads in five sizes, 14 different constructions. The A. R. A. standards prescribe one size and construction, leaving 13 extra constructions; on the basis of five sizes, leaving nine extra constructions. The steaming type of tank hose is purchased by 12 of the 19 roads, with requirements covering a range of six sizes, 22 different constructions. The A. R. A. standards provide for five sizes and constructions, leaving 17 extra constructions; on the basis of seven sizes, leaving 19 extra constructions.

Nineteen representative railroads specify 503 variations of size and construction in the air, steam, steam heat, tank and water hose they buy, 301 of which are *different* constructions. Forty of the 301 are in accord with the A. R. A. standard, leaving 261 extra or special constructions. Of that 261, 37 are what might be termed "A. R. A. Restricted Standards", differing only slightly from the A. R. A. standard but requiring special manufacture, and 224 are different individual constructions prescribed by the various roads. Hose is required in 24 sizes (inside diameters). The A. R. A. standards cover 16 of these sizes, leaving eight extra or special sizes.

This unnecessary diversification, the Mechanical Rubber Goods Manufacturers Division points out, increases the manufacturers' costs and consequently the price of hose to the railroads. If the A. R. A. "Recommended Practice" specifications were adopted by only the 19

(Continued on Next Page)

Aero Brand
DPG
DIPHENYLGUANIDINE
DOTG
DIORTHO-TOLYLGUANIDINE
The two most popular guanidine accelerators, made by the same process from basic raw materials which we control. Highest purity and uniform quality.
Stocks of Aero Brand DPG are carried at Warners, New Jersey; Akron, Ohio; San Francisco, and Azusa, California; Montreal and Toronto, Canada; and London, England.
DOTG is carried at Warners, New Jersey, only.
Address all communications to New York Offices
AMERICAN CYANAMID CO.
511 FIFTH AVENUE NEW YORK, N.Y.

DIAMOND
MICA
NON-METALLIC WATER GROUND
Highest Grade for Rubber Industries
Pure—finely powdered—For use in tread stocks, repairing tires, in air bags, inner tubes and various kinds of molded mechanical goods.
Desirable as it is a Toughener and Heat Resister
THE HARSHAW FULLER & GOODWIN CO.
CLEVELAND, OHIO
MILLS
Crabtree, N. C. Newdale, N. C.
Samples upon request
STOCKS CARRIED AT
Cleveland, O. Trenton, N. J. Chicago, Ill.

AMERICAN PARTICIPATION PLEASES DUTCH MAGNATE

"The elasticity of the rubber problem is as great as the elasticity of rubber itself," said J. N. Burger, chairman of the Dutch Rubber Association and one of the most prominent Dutch rubber magnates, in a recent interview.

"I consider the foundation of the Dutch-American Rubber Plantations Co., as the crown of my work," said Herr Burger, "for I have always aimed at American participation in the Dutch rubber industry. Besides the Holland-American Rubber Co., which is the holding company of the General Rubber Co. and the Intercontinental Rubber Co., no Dutch-American enterprises are working in the Dutch East Indies.

"In the United States there was growing discontent that Americans had to pay high prices without having a profit from production and in correspondence I received recently, the desire was expressed that American capital should participate actively in the Dutch rubber industry.

"Foundation of the Dutch-American Plantation Co., with a share capital of six million florins, 500,000 of which have been placed at par in New York, has been cordially received and welcomed in America and we have received strong support from the Washington administration."

The new company has obtained property in the various fields of the Lampong districts in the southern part of Sumatra of about 18,900 acres. Herr Burger, who is managing director of the new company, anticipates a still growing development of the rubber industry in Dutch overseas possessions.

Holland never can consume all the rubber she produces and her financial capacity is quite limited. American participation, therefore, will open a new period of international economic participation.

Bus Ally of Trolley

The rapid development of bus transportation in the last two or three years, and particularly in 1925, has brought all farseeing street railway officials to consider the bus as an ally rather than as a competitor, according to Paul C. Searles, director of sales of the India Tire & Rubber Co., Akron, Ohio.

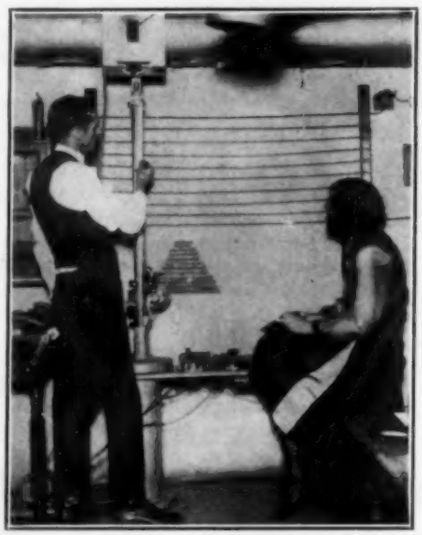
Because of the extensive use of India tires in bus service throughout the country, Mr. Searles has been making a special study of the relationship of traction and bus lines.

Some of the ways in which Mr. Searles finds electrical lines have utilized bus operation successfully are as follows: As shuttle or feeder lines to sparsely settled regions, where it would not be feasible to construct an extension of the railway, or into regions where some franchise limitation prohibits the construction of rail lines; to give more direct routings where a circuitous railway built years ago exists; to provide additional transportation; supplemental and preferred service, in some cases rendering express service by rail and local service by bus or vice versa; as a substitute for the railway on lines where the track is worn out and the construction of new track is not warranted or on lines which do not earn operating expenses; for pleasure riding; for special chartered services; for emergency service and for cross-town bus lines.

ACCURATE TESTS MADE IN CONSTANT TEMPERATURE

It is a matter of common observation that the physical properties of vulcanized rubber are affected by temperature conditions and it has been found that all rubber compounds are not affected to the same extent by equal differences of temperature.

The Bureau of Standards, Department of Commerce, is constantly



Making a Test in the Constant Temperature Room

engaged in the investigation of rubber and all experiments and tests relating to the physical properties are conducted in a constant temperature room shown in the accompanying illustration. The temperature is subject to thermostatic control within plus or minus 1°F. at any point within the range from 32° F. to 100°F. The equipment shown was all designed and built at the Bureau and includes testing machines for the determination of strength, elongation, and "set"; also an autographic machine for measuring adhesion or "friction", and a machine for securing stress-strain data. Aside from investigations requiring observations at different temperatures, this testing room serves a very useful purpose in connection with routine work. The Bureau of Standards acting in the capacity of official testing laboratory for the various government departments, has occasion to test a great variety of rubber products including automobile tires, tubes, mechanical rubber goods, and rubber sundries. Government purchases for the most part are made on specification, the requirements of which are definite in regard to the physical properties of goods delivered. For this reason it has been found desirable to have all tests made at a standard temperature which has been fixed arbitrarily at 75°F.

URGES ROADS TO ADOPT UNIFORM SPECIFICATIONS

(Continued from Page 349)

roads covered in the survey, the number of different constructions used by them would be reduced from 301 to 40, thus eliminating 261 extra or special constructions. If they were adopted by all roads, the reduction would be still greater. Such standardization would reduce production costs, selling expenses and purchase prices, eliminate misunderstandings, insure promptness of delivery, increase the quality of the product, and simplify stocks.

The railroads buy about $4,000,000 worth of rubber hose each year. The Rubber Association believes that the concentration of these purchases on a minimum number of constructions, as represented by the A. R. A. "Recommended Practice" specifications, would effect a material saving in the ultimate, if not in the initial cost of the hose to the public carriers.

The A. R. A. requirements (which were jointly formulated by the A. R. A. committee on specifications and tests for materials and the specification committee of the Rubber Association and adopted as "Recommended Practice" by the American Railway Association in Convention), assure the procurement of rubber hose of proven value, and the Mechanical Rubber Goods Manufacturers Division, in its letters, strongly recommended their use by railroads.

Move Foxboro Branch

The Foxboro Co. Inc., Foxboro, Mass., makers of indicating, recording and controlling instruments, have announced the change of address of their Pittsburgh office. Formerly, located in the Park Bldg., the company has moved this office to what will now be known as the "Foxboro Building", on the corner of Sixth Ave., and Grant St. The four upper floors of the building will be utilized for offices and the maintenance of a substantial stock of new instrument equipment, including flow meters, indicating and recording gauges and thermometers, controllers, etc. H. S. Gray continues in charge of the company's Pittsburgh branch.

Essex to Rebuild

The Essex Rubber Co., Trenton, N. J., plans to rebuild the structure, recently destroyed by fire in which the machine shop, finishing and inspection departments were housed. The flames caused a loss of about $150,000, according to Clifford H. Oakley, president, but the loss is fully covered by insurance. Work at the factory will not be impaired beyond a few days and none of the employees will lose any time. After fighting the blaze for four hours, firemen managed to save the main factory and the new $50,000 shipping department. Work on the new building will be started as soon as the debris has been cleared away and insurance adjusted.

START PLANTING RUBBER ON PANAMA RESERVATION

Plans to provide a rubber reserve to meet emergency needs are understood to have been worked out by the War Department in co-operation with the Department of Agriculture. These two departments have begun the planting of rubber trees on the Fort Sherman Military Reservation in Panama, according to Dr. Karl F. Kellerman, associate chief, Bureau of Plant Industry, in a recent statement to the House Appropriations Committee.

According to Dr. Kellerman, if it is possible to plant rather widely on the Canal Zone, then the idea of having a rubber reserve under the control of this government will be a possible thing. In response to questions from members of the committee, the witness also stated that it would be possible to set up such a reserve also in the Philippines.

Work in California and Florida

Discussing the work of the Department of Agriculture in the study of rubber production in California and Florida, Dr. Kellerman stated that there are undoubtedly some plants that can successfully be grown in those States. At experiment stations there are collections of suitable plants that contain rubber of good quality, and it is the idea of the Department to devise methods of growing these plants that would be practical for labor and other conditions in the United States. For those plants that seem to have possibilities of cultural handling the department devises methods for rubber extraction, but this latter phase of the work is not as far advanced as the problem of growing the plants.

"There are some plants we know we can grow," he assured the committee. "Whether we can produce from them rubber under conditions that would give any chance of economic competition with present plantations is still a doubtful proposition. At the present time, and if prices were to stay anywhere near present levels, there is no doubt that wide expansion of rubber production would be advisable.

"The hope had been that with comparatively little difficulty large plantations could be developed in Brazil that would balance the production and produce a type of competitive production of enough magnitude to stabilize prices.

"There seems to be very little chance of that, for a good many reasons. One reason, which applies to the entire Western hemisphere, is the absence of the abundant cheap labor which is available in the Orient. In addition to that there are difficulties of transportation and plantation development in the Amazon region which appear to be serious. Also it looks as if plantation development will be impossible unless methods of plant disease control can be worked out, and they are not yet known."

Better results are being obtained in Haiti, according to Dr. Kellerman.

TILSON SAYS INQUIRY HAS BEEN OF BENEFIT

The rubber inquiry has already accomplished much good by focusing the attention of this country and foreign countries on the situation, Republican Floor Leader Tilson told the House January 21. If it should accomplish nothing else, he explained, it will bring before the country a realization of any mistakes that may have been made in the past which, being realized, means that the genius of the American people will soon set itself the task of providing against the recurrence of such mistake in the future.

"The action of a number of business men in New York the other day indicates the spirit in which American enterprise tackles difficult problems when thoroughly aroused and fully acquainted with their nature," Mr. Tilson said. "Other good has and will come from this inquiry. The price of crude rubber has temporarily at least dropped about 25 per cent, which means $700,000 a day to the rubber industry and the consumers of rubber products. It will accomplsh other good."

Form E. H. Schuldt, Inc.

E. H. Schuldt, Inc., Newark, N. J., was recently incorporated to deal in rubber products. Authorized capital is $100,000. Incorporators are Erich H. Schuldt, Edmund Georgi, and R. Elmer Jones.

List of Domestic and Foreign Firms which are

MEMBERS OF THE COCOA AND RUBBER EXCHANGE OF AMERICA, INC.

The following U. S. and foreign firms, many of which are located in New York, are members of the Cocoa & Rubber Exchange:

J. Aron & Co., Inc., 95 Wall St.;
Andean Trading Co., 132 Front St.;
Arnold, Dorr & Co., 93 Front St.;
African Cocoa & Mahogany Co., Lewis & 7th Sts.;
African & Eastern Trading Co., Inc., 26 Beaver St.;
J. S. Bache & Co., 42 Broadway.
Frank J. Barrett & Co, 85 Front St.;
Rutger Bleecker & Co., Inc., 80 Wall St.;
Blumenthal Bros., 16 Exchange Pl.;
T. Barbour Brown & Co., 87 Front St.;
Robert G. Baiter, 4 Hanover Sq.;
Edw. W. Borer;
Pablo Calvet & Co., 7 Hanover St.;
E. A. Canalizo & Co., 142 Pearl St.;
Frank E. Childs & Bro., Inc, 75 Front St.;
S. H. Crantson & Co., 19 Park Pl.;
Cordillera Commercial Co., 96 Wall St.;
Corn, Schwarz & Co., 15 William St.;
Curacao Trading Co., 298 Broadway;
Colombia-America Corp., 59 Pearl St.;
E. L. Cleverly;
Daarnhouwer & Co., Inc., 67 Wall St.;
De Sola Bros. & Pardo, 106 Front St.;
R. F. Desvernine, 82 Beaver St.;
J. F. Dengel, Jr.;
Harry J. Dengel;
Ecuador Finance Corp., 25 Broadway;
J. E. Eddy;
Earle Bros., 66 Broad St.;
G. K. Fullerton;
Gillespie & Co., of N Y., Inc., 49 Broadway;
W. R Grace & Co., 7 Hanover Sq.;
Graham, Hinkley & Co, 135 Front St.;
The Otto Gerdau Co., 14-16 Lispenard St.;
Habicht, Braun & Co., 161 Hudson St.;
Hess & Hamilton, 82 Beaver St.;
H. C. Harnickell, 71 Broadway;
Hayward & Hart, 135 Front St.;
Adolph Hirsch & Co., Inc., 63 Park Row;
H. W. Holcombe, 9 Hanover St.;
E. F. Hutton & Co, 61 Broadway;
Importadores, Inc., 116 Broad St.;
J. J. Julia & Co., 4 Stone St.;
Lewis Jackson;
L. R. Knust, 124 Water St.;
Lawrence Johnson & Co., 108 Water St.;
Lamborn, Hutchings & Co., 7 Wall St.;
Lehman Bros., 16 William St.;
Geo. C. Lee & Co., 26 Beaver St.;
Thos. Leyland & Co., Inc., Readville, Mass.
J. L. Livermore, 71 Broadway;
P. W. Livermore, 71 Broadway;
Livingston & Co., 111 Broadway;
Middleton & Co., 66 Broad St.;
Marcone & Co., Inc., 98 Front St.;
Ed Maurer, 81 Fulton St.;
Mecke & Co., 7-9 Hanover St.;
C. R. Massi;
R. B. Meyer;
Neischlag & Co., Inc., 56 Beaver St.;
Nortz & Co., 96 Front St.;
The Niger Co., Inc., 82 Beaver St.;
Oliver & Keeler, 89 Broad St.;
Orvis Bros & Co., 60 Broadway;
E. S. Paine, 160 Broadway;
Emil Pick, 67 Wall St.;
Pynchon & Co., 111 Broadway;
Ravenscroft & Co., Galveston, Texas;
Raynor & Stonington, Inc., 80 Wall St.;
Rockwood & Co., 88 Washington Ave., Brooklyn;
Snyder & Wheeler, 128 Pearl St.;
Stevenson & Wettach, 122 Water St.;
Wm. Schall & Co., 160 Broadway;
Scholtz, & Co., 11 Moore St.;
Spencer-Hess & Walter, Inc., 89 Broad St.;
Steinwender, Stoffregen & Co., 87 Wall St.;
C. Schroeter, Inc., 10 Hanover St.;
Smith, Kirkpatrick & Co., 115 Broad St.;
H. Steinhouse;
J. F. Sweeney;
G. P. Tameling, 7 Wall St.;
G. C. Tooker, 124 Water St.;
Ultramares Corp., 25 So. William St.;
Von Dannenberg & Co., 82 Beaver St.;
Wood & Selick, Inc., 36 Hudson St.;
Willard Hawes & Co., 7th St. & East River;
Wessels, Kulenkampff & Co., 113 Pearl St.;
Welch, Fairchild & Co., 135 Front St.;
I. Wilkin & Co., 82 Beaver St.;
Willard Hawes & Co., Lewis & 7th Sts.;
Bache McE. Whitlock 90 Wall St.;
Wood & Selick, Inc., 36 Hudson St.;
Yglesias & Co., 29 Broadway;

PHILADELPHIA

Borer & Ulrich.

BOSTON

Thos. Leyland & Co., Inc.

GALVESTON

Ravenscroft & Co.

LONDON

Landsberg & Co., Ltd.
Hayn Roman & Co.
R. J. Rouse & Co.
J. H. Rayner & Co., Ltd.
Hecht, Levis & Kahn.
Drummond, Power & Co., Ltd.
Pralle & Kuttner.
Frame & Co.

LIVERPOOL

Hornby, Hemelryk & Co.
A. J. Buston & Co.
J. H. Rayner & Co., Ltd.
Alexander Eccles & Co.
Newall & Clayton.
Ravenscroft & Co.

PARIS

Alcan & Co.
E. & G. Blum.
Joseph Danon & Cie
Societe Francaise pour le Commerce avec les Colonies et l'Etranger
Manuel F. Pardo & Co.

HAVRE

D. Virnot Fils
Comptoir Havrais d'Affaires en Merchandises
Compagnie Cotonniere
Societe Commerciale Interoceanique
Comptoir Dufay et Gigandet
Geo. Robinson
Etienne Fossat
Eugene L. Taguey
Hugo Schneider

MARSEILLE

Joseph Perin

HAMBURG

Frese & Goedecken
Hassel & Co.
Gebruder Michahelles.
E. A. Jencruel & Co.
Fritz Meyer

AMSTERDAM

De Waal & Von Overzee

SOERABAIA, JAVA

R. E. Marcus & Co.

TORONTO

Thos. B. Greening Co.

LA GUAYRA, VENEZUELA

Frederico Eraso
Aristides Moreau

GUAYAQUIL, ECUADOR

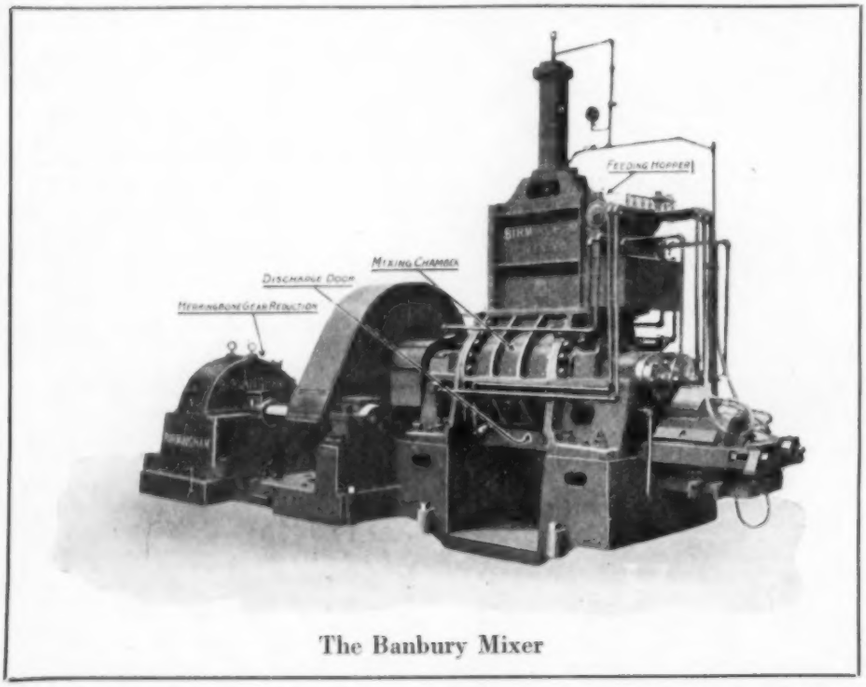
Gustave L. Channange

FACTORY EQUIPMENT

Use of the Banbury Mixer in Handling Compressed Carbon Black

The past year was marked by a decided improvement in the methods of handling compounding ingredients, including greater ease, economy and freedom from nuisance where large quantities of pigments are used in rubber factories. A great deal of this improvement was due to the use of the Banbury Mixer, manufactured by the Birmingham Iron Foundry Co., Derby, Conn.

The mixer, illustrated on this page, is well-known to rubber manufacturers for over 300 of them are in use to-day in the industry. The Banbury Mixer consists of a large semi-steel case with hopper feed. The case is equipped with two slow rotating and inter-mixing paddles. A master batch running as high as 200 pounds may be as thoroughly mixed in a Banbury in 10 minutes as it could be done by two 60-inch rubber mills running an hour.



The Banbury Mixer

J. W. Mattaei, superintendent of the Paracord Company, Johnson City, N. Y., is one of the pioneers in the use of this machine. The Paracord Company, which is among the largest manufacturers of rubber soles and heels in the world, has a daily output of approximately 35,000 pairs of soles and 100,000 pairs of heels a day. When this factory was faced with the problem of incorporating a high percentage of carbon black in their sole compound to produce high wearing qualities, it proved to be an almost impossible feat, due to the extreme difficulty of dispersing the carbon black with the ordinary 60-inch mill in a reasonable length of time. It required over an hour's milling on the ordinary mill to mix upwards of 25 per cent carbon black into the sole compound, and the operation was accompanied by serious dusting throughout the mill room. This condition made it very difficult to keep the lighter colored stocks clean.

About two years ago the Paracord Company installed a single Banbury mixer and not only found that the high carbon black mix could be effected in about one-sixth the time, but also learned that the use of the mixer completely eliminated the dust trouble. Mr. Mattaei equipped the mixer with a light sheet iron leading to a high-speed exhaust fan which took the carbon black dust away from the mixer and mixing room. By careful handling of the carbon black packages when placing the material in the mixer, even the amount of dust drawn by the fan was found to be negligible. The first Banbury installation at the Paracord factory has since been followed by two additional machines.

The use of these mixers made it possible to use a more highly compressed form of carbon black than was feasible when using the old style mill. To meet the demand for this form of carbon black, J. M. Huber, Inc., New York City, have been marketing a special extra heavily compressed package which is working out with great satisfaction in connection with the Banbury mixers at Paracord and other rubber factories. The new package is not only easier to handle in the warehouse, but occupies less storage space, with a resultant saving. Due to the intensive mastication effected in the Banbury mixer the highly compressed carbon black is quickly broken down and thoroughly dispersed. The result is said to be a smoother and far superior compound than has heretofore been produced.

UNITED STATES RUBBER SHIPS GAITERS BY AIR

Freight transportation by air was recently carried out by the Naugatuck, Conn., factory of the United States Rubber Co. J. P. Andrews of Mitchel Field, piloting a Curtiss plane, brought a shipment of gaiters to New York from the Colonial Air Transport Corp. field at Bethany to New York when two heavy snowfalls in ten days tied up the railroads and made inroads into footwear stocks in the city. The shipment was the first to go by means other than train, boat or truck. The machine was equipped with runners 8 feet long and 18 inches wide, and Mr. Andrews said he had no difficulty in landing on the snow-covered fields.

Those present at the arrival or departure of the plane included Charles T. McCarthy, vice president and a factory manager of the United States Rubber Co.; William T. Rodenback, treasurer; Frederick F. Schaffer, superintendent; Charles W. Hubbell, superintendent; George P. Young, industrial relations manager; Warden Harris Whittemore, Jr., and George Warner.

Balls Dutiable as Toys

The Treasury Department recently addressed a communication to the Collector of Customs at the Port of New York to the effect that toy rubber balls 8 inches in diameter, with pictures representing children at play, are dutiable under paragraph 1414, Act of 1922, as toys. The Collector was directed to assess duty at the rate of 70 per cent ad valorem on all such balls imported or withdrawn from customs custody 30 days after the publication of the notice in the weekly *Treasury Decisions*. The notice was published February 4.

Goodrich Salesmen Meet

A sales conference of representatives of the B. F. Goodrich Co., Akron, held recently at the Hotel Mason, Jacksonville, Fla., was attended by 28 salesmen from every section of the state. The Goodrich Jacksonville branch is the headquarters for Florida. It has direct supervision over other branches in Tampa, Miami and Orlando.

Help Owners Save Tires

As an aid in helping cut down the consumption of crude rubber in line with Herbert Hoover's campaign, the Olds Motor Works, a division of General Motors, is furnishing all purchasers of Oldsmobiles with instructions for prolonging the life of their tires.

Trials and Tribulations of DPG

History of Hoffman Tests in 1848-1869
Later Developments by Kratz and Weiss.

Many rubber executives and chemists who are interested in the outcome of recent and coming patent suits on Diphenylguanidine are confused about the history and development of this material, especially insofar as the patent litigations are concerned. We are therefore presenting in this short article a resume of the origin and recent tests with this material and a brief history of the various patent suits which have kept the industry on edge for a number of years.—EDITOR.

THE first substituted guanidine was synthetically produced by A. W. Hoffman in 1848 by passing dry cyanogen chloride gas into anhydrous aniline. The resulting product was Diphenylguanidine Hydrochloride, which he called Melaniline because of its analogy to the Melamine discovered by Liebig.

In 1855 Cahours and Cloez, while studying the action of cyanogen chloride on ammonia bases, observed that when dry cyanogen chloride is passed into a solution of aniline in anhydrous ether, aniline hydrochloride and cyanic anilide are formed. Equal molecular parts of these in an alcoholic solution, when heated, produced Hoffman's Melaniline.

In 1869 Hoffman synthesized Diphenylguanidine by a method entirely different from the one he used 21 years before. He desulfurized Thiocarbanilid with Lead Oxide in a solution of alcoholic ammonia. The resulting product corresponded in all its properties with his former Melaniline, with the exception of melting point. His original Melaniline fused at 120° to 130° C., while the new product melted at 147° C. Hoffman then concluded that the new product was an isomer of his former Melaniline.

In 1875 Carl Forster published a paper on the conversion of substituted thioureas into guanidines. Forster's method was desulfurizing thioureas by means of mercurie salts in the presence of ammonia. The product he obtained was identical with the second product of Hoffman's.

In 1876 Weith and Schroeder published the results of their investigation of the two guanidines. They prepared the guanidines of Hoffman's first and second methods and subjected them to a rigid examination of their properties and reactions. They found both substances to be identical and they concluded that there is only one Diphenylguanidine and that is the symmetrical one. Hoffman later confirmed the results of Weith and Schroeder.

In 1879 Rathke studied the different methods for preparing these guanidines.

For 71 years D.P.G. remained one of a number of freak compounds that were exhibited only as chemical curiosities; it had absolutely no known commercial value. It remained for Morris L. Weiss, an organic research chemist at the Republic Rubber Company, and G. O. Kratz to discover the wide capability and adaptability of D.P.G. for the betterment of all kinds of rubber in 1917 to 1919.

In March, 1920, this knowledge was offered in succession to five different rubber companies and two chemical concerns that manufacture accelerators for the rubber industry. All of these companies refused to consider the proposition of Weiss, for they believed that this new product did not have the value that Weiss claimed. After failing to interest these companies, Weiss interviewed Messrs. H. S. Doty and Van Lear Woodward of the States Metals Company of New York and convinced them that D.P.G. had exceptional merits. They founded the Dovan Chemical Corporation for the express purpose of manufacturing and selling this material. In May, 1920, a small factory was equipped which, by August, succeeded in producing small amounts of the new accelerator.

Because of lack of capital, the operations and apparatus of this plant were exceedingly crude: an old cider press was transformed into a filter press; agitation was done by hand; a rolling pin and a flat-top table constituted the grinding apparatus with which the lumpy precipitated material was crushed before it was sent to a grinding laboratory for further refinement.

The lack of capital was only one of many difficulties that arose. The rubber companies were slow to recognize the value of the new accelerator and it was only after several months of extensive efforts that it was put across and a demand created. In the fall of 1921 the Dovan factory burned to the ground and other companies, realizing the value of the new accelerator and knowing of the difficulties of Dovan, began to manufacture D.P.G. However, a new factory was soon equipped by Dovan and they again resumed the manufacture of this product.

In the meantime Dovan had applied for and later obtained patents in several countries on the use of D.P.G. as an accelerator for the vulcanization of rubber, and on a process for its manufacture. This patent was filed on November 12, 1921 by Weiss in the United States and was granted on March 28, 1922. It is known as U. S. Patent No. 1,411,231.

Under the grants of this patent, Dovan licensed Roessler & Hasslacher to manufacture D.P.G. but National Aniline & Chemical Company claimed that the Weiss patents were invalid and therefore started the manufacture of this product. The result of this action was that Dovan instituted a suit against National Aniline in the District Court of New York and Dovan won in a decision handed down in January, 1923. An appeal was taken by National and in May, 1923 the original decision was reversed and National obtained a verdict by the New York Court of Appeals.

The Grasselli Chemical Co., in the meantime controlled the original Hoffman Patent No. 1,149,580 and Dovan and Roessler & Hasslacher, were licensed to manufacture D.P.G. under this patent.

The Dovan Chemical Company acting in the belief that the decision of the N. Y. Court of Appeals in its case against National Aniline was not justified by the facts, brought suit against the Corona Cord Tire Co., East Butler, Pa., as a user of D.P.G. This was an attempt to again validate the Weiss patents and in the recent decision of Judge Gibson, given elsewhere in this issue of THE RUBBER AGE, it was held that "Morris L. Weiss was not the inventor or discoverer of the efficacy of D.P.G. as a vulcanization accelerator." This decision will be shortly appealed by Dovan.

The interest of the rubber industry is now centered on the suit of Grasselli against National Aniline for infringement of the Hoffman patent. Much depends on the outcome of this case, which has been postponed a number of times and it is hoped that additional information will be available shortly.

SUMMARY OF ADVANTAGES OF DIPHENYLGUANIDINE

1. Non-poisonous to handle, odorless and free from all objectionable fumes.
2. No special means of handling are necessary, as it is a finely divided, dry, non-hygroscopic powder.
3. It is applicable to every class of rubber compound.
4. Works in conjunction with all compounding ingredients.
5. Very active in presence of reclaimed rubber.
6. Does not dull or destroy organic colors.
7. If the sulphur to rubber proportion is proper, the stocks have a long flat curing curve and are therefore foolproof.
8. Its critical temperature is high enough to prevent scorching.
9. It is very active, even in very low percentages.
10. Properly compounded, stocks age extremely well, and have very little tendency to overcure.
11. Produces non-blooming stocks of very good qualities.
12. Produces pure gum compounds with a very high resistance to tear, therefore valuable in tube stocks.
13. Does not lose its curing power on being stored or when milled into compounds, no matter how long they are kept.
14. Low specific gravity.
15. It has a basic reaction and therefore keeps the rubber in vulcanized compounds in a non-polymerized state which is most conducive to good aging.

The Handling of Solvents

Many Fires in Rubber Plants Have Been Caused by Ignition of Inflammable Vapors by Static Sparks

By D. T. Wright

Assistant Chemical Engineer,
Underwriter's Laboratories, Chicago.

THE FIRE and explosion hazard involved in the storage, use, and handling of flammable solvents has always commanded attention. The results of extreme carelessness, or ignorance have been so disastrous that certain rules have been universally adopted. Specific containers have been designated for the transportations of such solvents by the Government of the United States through the Interstate Commerce regulations. People charged with the handling of flammable solvents are almost universally instructed to keep them away from flames, and in cool places. The fire insurance companies have made many regulations governing storage, use and handling.

In spite of all the precautions which have been taken, many fires have occurred which were directly attributed to flammable vapors. *The Rubber Mills-Fire Record* of The National Fire Protection Association discloses a large number of fires attributed to the ignition of vapors of flammable solvents by static electrical discharges.

Nature of Solvents

Unfortunately the solvents best suited to use by the rubber industry are decidedly flammable. As the degree of hazard varies with the choice of solvents, great care should be taken to select those solvents with properties best suited to the need. Knowing the exact nature of the solvent being used in a particular operation, standard precautions can be taken in its handling, storage and use.

The degree of volatility and flashing points of commercial napthas vary over a rather wide range. It is well to specify carefully when purchasing naptha. A particular Baume naptha can be produced by the mixing of casing head gasoline and kerosene. Such a product would have very undesirable properties for most purposes. The casing head gasoline in the mixture would add a considerable hazard by its high volatility. Carefully drawn specifications should include degrees Baume, initial boiling and end point, and in certain special cases, the percentage distilled at 2 or more intermediate temperatures.

Naphtha used for quick drying cements will have specifications calling for 100 per cent to be distilled at about 212° F. and will be considerably more hazardous than products having an initial boiling point near 150° F. and an end point of say 400° F. The specifications for these various products should be well known by the personnel and care should be taken to prevent interchanging by error.

Benzol is another flammable solvent, which is used extensively. The pure product has a specific gravity of 0.879 at 68°F., a flashing point of -16.6°F., a boiling point of 176.3°F., a vapor density of 2.7 (air=1), and an explosive range in air of 2.7 volumes in air to 6.3 volumes in air. Benzol has a toxic effect which should be guarded against in its use.

In any operations where it is economically possible the fire hazard of naphtha and benzol can be greatly reduced by the use of a mixture of 60% carbon tetrachloride by volume and 40% naphtha or benzol. This percentage mixture has less fire hazard than kerosene. By increasing the percentage of carbon tetrachloride to a minimum of 70% by volume the resulting mixture will not flash even at its boiling point.

Carbon disulphide is extremely hazardous and should be mentioned especially because of the low temperature at which it will take fire. The apparent ignition temperature of carbon disulphide is 212°F. This is the temperature at which the product will ignite in air without application of flame. Its flashing point is -22°F., boiling point 115°F., and vapor density .2.6 (air=1). It burns explosively in air over a wide range of concentrations. One fire of known cause was started by placing a pan containing carbon disulphide on a steam pipe. The man who did this did not know it was so easy to start a fire.

Other highly flammable liquids are used and experimented with and from time to time additions will be made to the list of solvents used. Too much care cannot be taken to establish the exact characteristics of a new solvent or mixture.

The object in storing the solvents should be to isolate the bulk of the flammable solvents not needed for the day's run. This may be accomplished by storage in underground tanks or by the use of isolated buildings reserved for the purpose.

The National Fire Protection Association has formulated comprehensive rules for the construction, and location of underground tanks for hazardous liquids. These tanks must have vent pipes and other fittings as specified, and a readily accessible valve operated from above ground to close the tank in case of fire.

Where tank cars are used for filling, the car should be located during unloading inside a dike or over a depression, so that an overflow of liquid would not endanger surrounding property. Suitable drains ought to be provided to carry away overflow liquid.

Buildings reserved for the storage of flammable solvents should be ventilated so that the vapors would not accumulate and should be well removed from other buildings. They should be well lighted on all sides by windows so that artificial light would not be necessary in obtaining supplies. Where lighting is used the sockets ought to be keyless, the bulbs protected with safety globes, and the wiring in conduit with the switches and fuses located outside of the buildings.

Using the Solvents

The best plant practice is to isolate the most hazardous processes and then safeguard them to a maximum, at the same time not neglecting to protect the less hazardous processes. The act of separating the hazardous processes from each other and from the rest of the plant is recognition of the incompleteness of the most careful safety first work. Of course the human factor plays an important role in upsetting plans for safety. Effort should be made to reduce the human factor to a minimum.

In all the processes where solvents are being used the workrooms should be well ventilated. The fans should be installed outside of the rooms with sufficient fresh air intake, so that an explosive mixture of vapors in air will not pass through the fan. As the vapors from the solvents are heavier than air care should be taken to prevent vapors collecting near the floors. This ventilation at the floors can be accomplished by numerous pipes set close to the floors at a downward angle to the outdoors.

Easily available exits for employees should also be provided in the workshops containing hazardous processes.

It is a difficult problem to provide adequate fire fighting equipment to extinguish fires, which involve burning solvents, such as benzol. The location of special hazards, and the area

(*Continued on Page* 357)

Delivered before the Rubber Section of the National Safety Council at its Fourteenth Annual Safety Congress, Cleveland, Sept. 28 to Oct. 2, 1925.

Effect of Accelerators on Temperature of Rubber Mixtures

Acceleration with Organic Bases is a Coupled Process which Depends on Thermal and Chemical Action of Sulphur Molecule

By F. Kirchof

(The following article is a description of a number of observations made on the effect of inorganic and organic vulcanization accelerators on the temperature of rubber mixtures undergoing vulcanization and is a continuation of experiments previously made on this subject and published in back issues of *Gummi Zeitung*. The first subject discussed in this article deals with the natural organic accelerators.—THE EDITOR.)

BY NATURAL accelerators of vulcanization is understood the rubber resins as well as the albumens found in the natural raw rubber. The mixtures employed in the experiments consisted of para rubber of varying degrees of purity. In the first place washed para rubber was used, then para rubber which has been washed and extracted with acetone, then para rubber, treated as above and then dissolved in petroleum ether and precipitated with alcohol and further purified, and finally para rubber which has been deprived of its resinous matter by extraction with acetone and then mixed with albumen tar.

The maximum temperature rise obtained with these various rubbers is seen from the following tabulation:

MAXIMUM TEMPERATURES AND VULCANIZATION COEFFICIENTS WITH LEAD OXIDE-SULPHUR-PARA RUBBER MIXTURES AT ABOUT 150 DEGREES C BATH TEMPERATURE.

Composition of the mixture employed.	Maximum temperature of the mixture in degrees C.	Reached after time interval in minutes.	Vulcanization coefficient of same mixture after 30 minutes at 3 Atm.
A. 70 grams of para, not deresinified, 7 grams of sulphur, 23 grams of lead oxide	161.5	90	2.43
B. 68 grams of para deprived of resins, 7 grams of sulphur and 23 grams of lead oxide	153	100	1.78
C. 22 grams of para, chemically purified, 2.2 grams of sulphur and 7.5 grams of lead oxide	150	105	—
D. 68 grams of para deprived of resins, 2 grams of albumen tar, 7 grams of sulphur and 23 grams of lead oxide.	155	100	2.06
E. 70 grams of para rubber, not deprived of its resinous matter, 7 grams of sulphur, 23 grams of zinc oxide (for comparison with A)	149.5	110	1.63

As may be seen from the figures given in the above tabulation, the heat of reaction is principally developed after the action of the para resins on the sulphur in combination with the lead oxide. The albuminous substances, which are insoluble in acetone and which are removed in the process of chemical purification, have only a moderate action in this connection.

Seidl, who developed the results which are shown in the foregoing tabulation, also investigated the thermal action of other rubber resins and came to the final conclusion that the para resins were the most active of all.

For example he found in the case of mixtures which contained 40 grams of lead oxide, two grams of resins and eight grams of molten sulphur that the rise in temperature was as follows:

1.	Para rubber resinous matter	95 degrees C
2.	Peruvian ball resinous matter	54 degrees C
3.	Sudan niggers resinous matter	5 to 10 degrees C
4.	Mozambique rubber resinous matter	5 to 10 degrees C
5.	Flake rubber resinous matter	no rise in temperature.
6.	Dead Borneo rubber resinous matter	no rise in temperature.

The author has been able to substantiate all these results, as may be readily seen from the tabulation which follows and which gives the coefficient of vulcanization and the general behavior of the vulcanizates:

INFLUENCE OF THE NATURE OF RUBBER RESINS ON VULCANIZATION

(One hundred parts of extracted plantation para plus ten parts of sulphur are vulcanized for a period of thirty minutes at 134 degrees C).

Per cent	Added matter	Per cent of yellow sulphur	Behavior of the vulcanizate
	—		scarcely weakly vulcanized
2.5	Plantation Hevea resins	3.2	vulcanized completely
2.5	Resin acids from plantation Hevea.	1.86	weakly vulcanized
4.0	Dead Borneo resins	—	weakly vulcanized
2.0	Lead oxide (litharge)	1.8	weakly vulcanized
2.0	Litharge	3.0	completely vulcanized
2.5	Dead Borneo resins	3.0	completely vulcanized

The principal action of the resinous matter, as far as acceleration of the vulcanization of rubber is concerned, must therefore be assigned to the nitrogeneous constituents of the para rubber resins.

Isolation of Resinous Matter

In the isolation of this part of the resins from the resinic acids, the resins obtained from plantation para rubber by means of acetone extraction are subjected to steam distillation in the presence of a concentrated solution of potassium hydroxide. A small amount of a substance, which has a strong basic reaction and which possesses an amine-like odor, can be detected in the condenser. The residual matter that is left behind in the retort is diluted with water and is then shaken up with petroleum ether in order to remove the unsaponifiable matter, consisting of the waxy alcohols, and hydrocarbons. The saponified part is then decomposed with sulphuric acid and the resinic acids are extracted with ether. After washing and drying these acids are added to the acetone-extracted plantation para rubber in exactly the same proportions in which they were originally present in the rubber. The action of vulcanization is now only half as effective as before the decomposition of the resinous matter.

It is interesting, furthermore, that the increase in the coefficient of vulcanization as well as in the effect of the heat are almost proportional to the increase in resinous content of the rubber. The positive character of the reaction, sulphur plus rubber resin, as far as heat development is concerned, has the effect of accelerating the vulcanization of the rubber in the same degree. Inasmuch as the first reaction takes place at a certain fixed temperature (approximately 167 degrees C) with the evolution of a considerable quantity of sulphuretted hydrogen gas, an opportunity is presented here in the presence of an activating agent, such as litharge for further exothermic reactions, which have a still further accelerating action on the vulcanization of the rubber, to take place. This double action of the rubber resin,—and this applies as well to many other organic accelerators,—in the presence of lead oxide is quite characteristic.

Action of Added Organic Accelerators

The results of the experiments on this subject are given in tabulations II and III that follow. The organic accelerators employed in these experiments were principally amines, and amino substances then urea and sulphourea as well as certain derivatives of these substances.

Gummi Zeitung, 1925. Pages 892-895.

TABULATION II

INFLUENCE OF ARTIFICIALLY ADDED ORGANIC ACCELERATORS, PARTLY IN COMBINATION WITH CALCINED MAGNESIA, ON THE VULCANIZATION TEMPERATURE OF RUBBER MIXTURES.

(One hundred parts of the para rubber are mixed with twelve parts of sulphur and vulcanized for a period of one hour at a temperature of 140 degrees)

Number	Part	Organic Accelerator	Maximum temperature	Coefficient of vulcanization
1	0	———	1.5	2.9
2	2	Urea	2.0	4.0
3	2	Urea + 0.5 part MgO	7.2	7.8
4	2	Paratoluidine	6.2	5.6
5	2	Taluidine + 0.5 part MgO	3.0	6.0
6	1	Piperidine	10.6	8.1
7	1	Piperidine + 0.5 part MgO	8.5	10.4
8	3	Aniline	12.0	6.2
9	3	Aniline + 2 parts MgO	5.5	4.4
10	2	Diphenylsulphourea	14.0	2.9
11	2	Diphenylsulphourea + 2 parts MgO	4.0	4.3
12	2	Piperidine-piperidyl-dithiocarbamate	17.8	12.0
13	2	Napthylamine	16.5	4.3
14	2	Paratoluylenediamine	18.0	6.3

As may been seen from tabulations II and III the thermal action of these artificial organic accelerators is particularly stronger than that of the same amount of inorganic accelerator. On the other hand, there is here no clear parallelity between the observed reaction temperatures and the vulcanization effect which is produced, in other words between the reaction temperature and the coefficient of vulcanization, such as is the case with the inorganic accelerators.

However for the most part these discrepancies must be led back to the acetone solubility or rather non-solubility of the sulphur reaction products of the accelerators. This results in the coefficient of vulcanization appearing either as a higher or lower value than is actually the case. Hence the vulcanized rubbers that are obtained with the aid of piperidine, after a twenty hour extraction with the aid of acetone, showed 13.3 percent of combined sulphur, which was then removed by treatment with alcoholic solution of potassium hydroxide.

The cause of the rise of temperature that takes place in mixtures that contain urea when magnesia is added thereto may be explained by the fact that the magnesia decomposes the urea with the evolution of free ammonia. It is a fact that freshly vulcanized rubber mixtures of this sort have a very strong odor of ammonia. There also results in the mixture the reaction of the gas with free sulphur and the formation of ammonium sulphide and polysulphide.

In tabulation III there are seen the results obtained with experiments carried out with various organic accelerators, as well as the properties of these accelerators, as far as their chemical constitution, reactivity in aqueous solution and tendency to decompose at the vulcanizing temperatures are concerned. A study of these results shows that the thermal reactivity or accelerating action is a function of the basicity of the accelerator as well as of its capability of being decomposed at the vulcanizing temperatures. Compounds that have a weak acid reaction, for example the phenols, have no accelerating action on the vulcanization of rubber. Neutral substances which have no effect on the rapidity of vulcanization at the ordinary temperature can become possessed of accelerating properties if they are decomposed to give strongly basic substances, such as urea and dithiocarbamates at the vulcanizing temperatures. This decomposition can be accelerated catalytically by the presence of inorganic bases such as magnesia and lime.

Tabulation III

INFLUENCE OF THE CONSTITUTION, SUBSTITUTION, BASICITY AND CAPACITY OF BEING DECOMPOSED OF ARTIFICIAL ORGANIC ACCELERATORS ON THE ACCELERATION OF VULCANIZATION OF RUBBER

(One hundred parts of plantation para rubber are mixed with twelve parts of sulphur and vulcanized after thirty minutes at a temperature of 151 degrees C).

Number	Part	Organic Accelerator	Formula	Reaction at ordinary temperature	Capacity of being decomposed at vulcanizing temp.	Coefficient of vulcanization	Increase in coeff. over 1
1.	—	———	———	———	———	2.9	—
2.	2	Aniline	$C_6H_5.NH_2$	weakly alkaline	———	4.9	2.0
3.	3	Aniline	$C_6H_5.NH_2$	ditto	———	6.2	3.3
4.	3	Aniline hydrochloride	$C_6H_5.NH_2Cl$	weakly acid	partly dissociated	2.25	—0.65
5.	3	Phenol	$C_6H_5.OH$	ditto	———	2.0	—0.9
6.	2	Para aminophenol	$C_6H_4:(OH)\ (NH_2)$	neutral	———	3.1	0.2
7.	2	Para toluidine	$C_6H_4:(CH_3)\ (NH_2)$	weakly alkaline	———	5.6	2.7
8.	2	Para anisidine	$C_6H_4:(OCH_3)\ (NH_2)$	neutral	———	5.1	2.2
9.	2	Metaxylidine	$C_6H_3:(CH_3)_2\ (NH_2)$	weakly alkaline	———	4.7	1.8
10.	2	Alpha naphthylamine	$C_{10}H_7.NH_2$	weakly alkaline	———	4.3	1.4
11.	2	Metatoluylenediamine	$C_6H_3:(NH_2)_2$	alkaline	———	6.3	3.4
12.	2	Benzidine	$H_2N.C_6H_4.C_6H_4.NH_2$	weakly alkaline	partial change	3.5	0.6
13.	5	Pyridine	C_5H_5N	weakly alkaline	———	2.4	—0.5
14.	1	Piperidine	$C_5H_{10}:NH$	strongly alkaline	partial decomposition	8.1	5.2
15.	1	Piperidine-piperi-dylthio-carbamate	$SH_2N:(C_5H_{10})$ S:C $(N:C_5H_{10})$	neutral	strong decomposition	12.0	9.1
16.	2	Urea	$CO(NH_2)_2$	neutral	partly decomposed	4.0	1.1
17.	2	Sulphourea	$C:S.(NH_2)_2$	neutral	partly decomposed	4.5	1.6
18.	2	Diphenylsulphourea	$C:S(NHC_6H_5)_2$	neutral	partly decomposed	2.9	0
19.	2	Guanidine carbamate	$(NH_2)_2:C:NHCO_2H_2$	weakly alkaline	strongly decomposed	5.6	2.7
20.	1	Tetramethylammoniumcarbonate	$(CH_3)_4NCO_2H$	weakly alkaline	strongly decomposed	4.6	1.7

It may be taken as a rule that a high coefficient of vulcanization, which may be obtained with a certain rubber mixture, is accompanied by a reaction temperature which is also correspondingly high. But the reverse is not true. This observation was made in particular with the mixtures that contained magnesia, which almost always had the effect of reducing the reaction temperature, while the coefficient of vulcanization appeared to be higher than in the case of similar mixtures which did not contain any magnesia.

This action of magnesia may depend on the endothermic reaction that takes place between magnesia and sulphuretted hydrogen, which has the effect of decreasing the temperature of reaction and at the same time increases the formation of that variety of sulphur which is not soluble in acetone. The fact that the magnesium sulphide, which is formed in the reaction with sulphuretted hydrogen, combines with sulphur to yield unstable polysulphides appears to be quite probable and these sulphides act as sulphur-carriers, and so in spite of the low thermal effect a high vulcanization coefficient is obtained with such magnesia-containing mixtures. This is known as the polysulphide theory.

TABULATION IV.

CORELATION BETWEEN THE REACTION TEMPERATURE OF ARTIFICIAL ORGANIC ACCELERATORS WITH SULPHUR AND THE VULCANIZATION COEFFICIENT OF THE RUBBER MIXTURE.

Number	Organic accelerator	Equal parts of organic accelerator plus one part of sulphur: Reaction temperature with S in degrees C	100 parts of para rubber plus twelve parts of sulphur plus 2 % accelerator
1.	Piperidine	50 to 60	7.5
2.	Meta toluylenediamine	140	5.9
3.	Para toluidine	160	about 5
4.	Hexamethylenetetramine	165	5.3
5.	Aniline	170	4.6
6.	Alpha napthylamine	175	4.0
7.	Benzidine	180	3.4
8.	Para resin	about 187	—

Finally a factor was sought which would definitely correlate the reaction temperature and the so-called coefficient of vulcanization. The reaction temperature with melted sulphur is used for this purpose, as may be seen from the results given in tabulation number IV. This reaction temperature appears to be closely interrelated with the basicity of the organic accelerators. Although, for example, the strong piperidine base begins to react with sulphur even at the ordinary temperature, the weakly basic naphthylamine commences to react with sulphur at a temperature of 175 degrees C.

The Chemistry of Vulcanization

It has been assumed that at a temperature of 160 degrees C the dark red modification of sulphur that forms from the molten sulphur consists of S_3 or thiozon molecules. These molecules are difficult to isolate but reactions can be carried out with them. They yield additional products which appear to have a constitution analagous to that of the ozonides.

An investigation was carried out to see whether or not the organic bases act in vulcanization similarly to sodium sulphide and thiozonides were formed in the experiments.

Thus in the first place naphthylamine at temperature between 160 and 170 degrees C yielded with an excess of sulphur an intensely yellow coloring matter, which was soluble in acetone, alcohol and ether, but insoluble in water. This coloring matter was freed from the sulphur dissolved in it by repeated cooling of its ether solution. The analysis of the dark yellow mass obtained in this manner was as follows: 0.7922 gram of the substance yielded 1.3310 grams of $BaSO_4$ which corresponds to 25.7 percent of sulphur.

This sulphur content corresponds best to that of thiozonide of the formula, $(C_{10}H_7NH)_2.S_3$, which has a content of 25.1 percent of sulphur. One hint that this substance was formed in the reaction is the readiness with which the polysulphide or thiozonide compounds of sulphur decompose and separate out amorphous sulphur. At the vulcanizing temperature on the other hand the compound is stable. The substance is much like a sulphur dyestuff, particularly in the intensity of its color. The sulphur compounds of the other bases, such as toluidine, toluylenediamine and the like, behave in a similar manner.

Another experiment was made with hexamethylenetetramine. This was found to react with sulphur at a temperature varying between 160 and 165 degrees C with the evolution of sulphuretted hydrogen. The reaction product consists in part of a water soluble mass which possessed the odor of ammonium sulphide, of an amorphous yellow substance and of unchanged amorphous sulphur. The aqueous solution yielded intensely colored precipitates with the heavy metals. Thus an orange red precipitate was obtained with lead acetate and a yellowish precipitate with silver nitrate, which was quite stable in the cold but which became darker on being heated, indicating the formation of a sulphide of silver.

Reaction of Hexamethylenetetramine

The aqueous solution of the reaction product cannot therefore contain sulphides or polysulphides. An intense red coloration is produced with iron chloride just as when this salt is brought in contact with ammonium sulphocyanide. The analysis of the lead salt showed a content of 73.3 percent of lead and 16.4 percent of sulphur. Sulphocyanic acid and hydrogen sulphide are produced when the compound is decomposed with mineral acids. It is apparent that the lead salt is a soluble lead compound of cyantrisulphide with a formula $Pb_2(CN)_2.S_3$.

The orange yellow crystalline body exhibited all the properties of the insoluble cyantrisulphide, $(CN)_2.S_3$, as for example insolubility in water, alcohol, acetone, carbon disulphide. It dissolves in concentrated sulphuric acid with a gold yellow color reaction. On acidification of the solution obtained with concentrated potassium hydroxide both sulphuretted hydrogen and sulphocyanic acid are evolved.

A further investigation was made to determine whether the sulphur compounds of the organic bases exert any action on the vulcanization of rubber mixtures. The insoluble sulphur compounds formed by the action of sulphur on hexametheylenetetramine are referred to in particular. In this connection it was found that both the organic thiozonides as well as the insoluble cyantrisulphides have no action on the vulcanization of rubber in the absence of inorganic bases. In the presence of inorganic oxides, such as magnesium oxide, lead oxide and zinc oxide, a slight action is noticed.

Hence the vulcanization-accelerating action of the organic bases, that have been investigated and described in this article, can therefore rest only on an "activation" of the complex sulphur molecule, in the absence of inorganic bases, or metallic oxides. According to the investigation made by Aten on this subject (see *Zeits. Phys. Chemie,* 81, 83, 86, 88), an equilibrium exists at each temperature between the melting and the boiling point of sulphur between the various forms of sulphur, lambda sulphur mu or amorphous sulphur and pi sulphur, so that lambda sulphur is equal to mu sulphur plus pi sulphur. This equilibrium undergoes its sharpest changes between the temperature of 160 degrees C (which is the optimum vulcanizing temperature) and 200 degrees C. The increase in the vulcanizing temperature has a favorable effect in itself on the vulcanization process from the thermal standpoint. This action however is far less than the chemical action when the vulcanization is carried out in the presence of strong organic bases or substances that yield basic decomposition products. This action has the effect of enhancing the formation of mu and pi sulphur at low temperatures and in the case of piperidine it takes place at the ordinary temperature.

Vulcanization acceleration with the aid of organic bases or like substances is accordingly a coupled process which rests on the thermal and chemical action of the complex sulphur molecule, S_8, decomposition product pi sulphur, which is active and therefore enters into a reaction with the reactive rubber molecule.

Handling Solvents

(Continued from Page 354)

to be protected must be carefully studied. Water must be used wisely for it may spread the fire. Good foam systems are very effective in blanketing solvent fires. In many cases, flash fires may be successfully blanketed or smothered by steam. Carbon tetrachloride, sand, and solid sodium bicarbonate will be valuable in many instances.

The high insulating properties of the solvents and the materials handled in the rubber industry are conducive to the formation of static electricity. The hazard may be guarded against by two safety measures, namely, grounding, and maintaining a high humidity.

All metal parts of the building, including door frames, and window frames should be well grounded. Grounding should include piping, and all machinery, belts and other moving objects. A metalic platform which is grounded should be provided in front of all such equipment, as spreaders, and churns, so that employees must stand on the platforms.

All material passing through spreaders should be thoroughly grounded by numerous collecting points or by thoroughly grounded metal rollers for the purpose.

Outlets for all fixed piping for solvents should be grounded. Cans for transporting solvents should have chains fastened to them which will drag on the floor.

Employees should not be allowed to wear rubber soled shoes.

Although the value of grounding in preventing static discharges has been established, much work remains to be done before the whole problem of static phenomena will be understood.

It has been found that a high humidity helps to prevent the accumulation of static charges. It appears that the high humidity tends to make conductors of the insulating materials, at least on their surfaces.

It is suggested that each day a man who is qualified in fire prevention work make a trip through the plant, reporting any irregularities. It is believed that a trained man in constant contact with the various processes will be able to safeguard and improve the protection against fire, and that he will prevent neglect of safety measures, which might occur due to lack of responsibility.

EDITOR'S REVIEW DESK

Books **Trade Catalogs** **Articles**

MEASUREMENTS OF QUALITY OF FACTICE. 21 pp. 5″ x 7″. The Stamford Rubber Supply Co., Stamford, Conn.

Although the user of Factice may be curious about its manufacture and the raw material used, his vital concern is with the quality of the Factice which goes into his rubber compounds. The change which the vegetable oil from which Factice is made undergoes during vulcanization so alters its chemical and physical characteristics as to hinder its identification. The question of quality therefore resolves itself into confidence and analysis. Upon the integrity of the manufacturer must rest his confidence in the raw materials. The booklet discusses the facts underlying the confidence of the manufacturer under four heads: Color, Fineness, Mineral Content, Solubility in Acetone.

Recommendations for the determination of the acetone soluble portion of Factice are given in the back of the booklet, and the siphon tube and straight tube extractors used are illustrated. A graph is shown of the acetone extraction curve.

The rubber executive and chemist will undoubtedly read this well-written little booklet with great interest.

• • •

PERIODICAL TAPPING OF HEVEA. By J. Eaton and R. O. Bishop. Published in the *Malayan Agricultural Journal* for November.

The chief result of the series of experiments forming the subject of this article was to show that the alternation of tapping and resting affects the time of vulcanization of the rubber.

Rubber obtained from trees tapped after a long period of rest had, during the early stages of renewal of tapping, a slow rate of vulcanization. Owing to the irregularity of tensile strength definite conclusions could not be reached regarding the actual tensile quality of the rubber.

Rates of vulcanization of rubber from trees tapped after resting periods of one month or less fell within the normal region of cure (deviations up to 20 per cent of average) and most of them within the uniform region (deviations up to 10 per cent of the average).

Rates of vulcanization of the samples from the trees immediately after the short periods of rest were as slow for the longer periods of rest. Final rate of vulcanization of rubber from trees rested for four and six months was also faster than in the case of shorter resting period, so that the total variation was greater for the longer resting periods.

• • •

THIRD PROGRESS REPORT OF THE SUB-COMMITTEE ON BENZOL. Published for the Chemical Section of the National Safety Council by the National Bureau of Casualty & Surety Underwriters.

The above was prepared by a special committee of the National Safety Council after three years of study conducted by experts in the fields of medicine, engineering and manufacturing. It gives a history of the investigation, discusses benzol as an industrial hazard and gives the results of studies in the chronic poisoning of the workers as evidenced by blood examination.

Benzol is employed in the rubber industry as a solvent and as a part of the process it must be removed so as to leave the originally dissolved substances in place. This is done chiefly by evaporation and plants employing this method have been the subject of study and investigation by the Committee. Eighteen workrooms were investigated of which nine were equipped with no artificial ventilation, four with local exhaust ventilation, two with general room ventilation, one with both local exhaust and general ventilation and two with what amounted to practically an enclosed process. The general conclusion was that rooms in which benzol is evaporated into the air without local exhaust ventilation will in most cases show high concentration of the fumes. With ideal local exhaust ventilation, large quantities of benzol were used without heavy atmospheric contamination.

• • •

BOSTON SPEED REDUCING UNITS. Catalog of Boston Gear Works Sales Co., Norfolk Downs, Mass. 24 pp. 3½ x 6″.

A series of speed reduction units, manufactured by the Boston Gear Works Sales Co., is illustrated and discussed in this catalog. Specifications and prices are also given. Service stations where this company's gears may be obtained are listed, covering twenty of the principal cities of the United States.

• • •

TAPPING SYSTEMS AND OTHER FACTORS INFLUENCING YIELD OF HEVEA BRASILIENSIS. By F. G. Spring. Published in the *Malayan Agricultural Journal* for September.

In this paper is given the result of study of tapping experiments carried out on several estates. The facts gathered from six estates are given in detail relating to yields, hours of tapping, time of tapping, number of cuts to a tree, etc. Each coolie tapped 400 trees per day. Over the areas where the trees had single cuts, all cuts were opened at 20 inches from the ground. Trees on which two cuts were tapped had the upper cut at 36 inches from the ground and the lower cut at 20 inches from the ground. By the end of 1917 the bark renewal on trees which had been tapped with two cuts were so poor, that it was quite evident that this system of tapping was far too drastic. The yield obtained from a single cut was 98.69% of that obtained from a double cut.

• • •

RECREATION AND WORK SHOES. 11 pp. Issued by La Crosse Rubber Mills Co., La Crosse, Wis.

Carrying the net price list of August 1, 1925, this catalog condenses into a few pages, a wide line of footwear for sport and hiking use. The company has succeeded in telling adequately, although briefly, the story of its product, with description, sizes and prices.

• • •

BIRMINGHAM RUBBER MILL MACHINERY. Catalog "D". 60 pp. 11″ x 8¾″. Printed on coated paper. Issued by the Birmingham Iron Foundry, Derby, Conn.

This handsome catalog has achieved a method of description seldom found in publications of this character. Instead of pages of written matter elaborating on the product, the company has supplied full-page halftones of the equipment it wishes to bring to the attention of its clientele, with a few lines of concise descriptive matter accompanying each illustration.

Calenders, washers, refiners, hydraulic presses and similar requisites of factories manufacturing tires and accessories, boots and shoes, insulated wire, hard rubber goods and similar articles, are shown, the last page carrying a full index of the contents.

• • •

SOME OBSERVATIONS ON TAPPING HEVEA. By W. N. C. Belgrave. Published in *The Malayan Agricultural Journal*, August, 1925.

Experiments on eight plots over a period of four years resulted in the deduction that there is no commercial future for tapping methods involving long cuts and long intervals. Even if there is a compensating increase of flow, drying out leads to too rapid consumption of bark relative to latex obtained. From the theoretical point of view there were indications that plots located on hilly somewhat washed land gave yields roughtly proportional to the length of cut and frequency of tap, but the yields on plots situated on flat land indicated yields greater than the theoretical. This would seem to point to water supply as a limiting factor in production, which if established, will prove the solution of many problems.

The Market Place

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Grasselerator 552
Grasselerator 808
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THE MARKET PLACE Section Continued on Second Page Following.

MARKETS

Cottons and Fabrics

NEW YORK, Feb. 15, 1926

Although new crop possibilities have aroused great interest several weeks must elapse before they can be expected to exert a definite market influence. In the meantime, the crux of the situation is the propspective attitude of holders of desirable cotton, especially that which is suitable for delivery on contract.

Owing to the rapidity with which this season's crop has moved "into sight" the amount of cotton, including linters, which has still to come into statistical channels probably does not exceed 3,000,000 bales against about 2,700,000 bales at this time last year. Stocks at ports and at interior towns are, however, much greater than they were a year ago. At the end of the first week of February they were 3,342,000 bales, against 2,594,000 bales last year. After making allowance for the possibility that much of the available supply may be untenderable and that some, on account of stable qualities may be sold only in spot markets, there can be no doubt that the amount of cotton that the futures markets can provide must be considerable. Despite the comparatively poor demand from spinners both here and abroad, and notwithstanding the prevailing premium on the near position, tenderable cotton is neither being pressed for sale nor is it being certificated in volume in the contract markets.

Running stocks in New York, which, at the beginning of the year amounted to 82,000 bales, have now been reduced to 41,200 bales, of which 38,700 are certificated. Present indications are that local exports are likely to cause a further reduction in the size of the stock before the end of this month. The slight decline in the near month premium which occurred during the past few days was due to scattered liquidation and to the transferring of hedges from March to May. The chief supporting factor of the market appears to be the belief that the majority of March contracts are in strong hands, with a trade and speculative short interest yet to be covered, indicating the likelihood of the present premium being maintained.

The recent stability of prices is regarded as being largely the outcome of unusual technical conditions but, it is believed, that so long as these conditions exist bearish activity will undoubtedly be restrained. These conditions may be ascribed principally to the price ideas of Southern holders whose attitude may wield an important influence in the next few weeks.

According to A. Norden & Co., the wide range of possibilities with regard to both old and new crop developments precludes the formation of any pronounced views regarding the future course of the market.

New York Prices

	Open	High	Low	Close	Close Feb. 1
March	20.20	20.25	19.9	20.05	20.22
May	19.62	19.62	19.42	19.53	19.64
July	18.95	18.95	18.78	18.88	18.93
October	18.22	18.25	18.14	18.24	18.22
December	17.90	17.92	17.77	17.87	17.92

TIRE FABRICS

The average monthly consumption of tire fabric has run above 18,000,000 pounds. The change over to the production of cheaper tires has led to interest in some of the poorer fabric constructions. Fabric mills have been producing more actively than they did a year ago and it is still possible to place contracts in some quarters for early delivery. Quotations have held nominally unchanged.

CORD FABRICS

Combed Sakellarides		Nominal	
Combed Peeler	lb.	Nominal	
Carded Peeler		.47 @	.48
Combed Egyptian uppers	lb.	.63 @	—
Carded Egyptian uppers	lb.	.56 @	.58

SQUARE WOVEN

17¼-ounce Egyptian uppers, combed	lb.	Nominal	
17¼-ounce Egyptian uppers, carded	lb.	.54 @	.57
17¼-ounce Sakellarides, combed	lb.	Nominal	
17¼-ounce Peeler, carded	lb.	.45 @	.46

Ducks—A number of mills are well sold up through April and have orders on their books which run into June. Factors consider the situation satisfactory. A small steady business was reported during the last two weeks. But small orders did not bring out concessions, although mills would like to employ more of their enameling, single and double filling duck machinery.

Burlaps—During the last few days it was difficult to interest buyers as most factors felt that prices had advanced far enough. To some it appeared that the purpose of mills was to keep the market on the fence with promises of action followed by deferments until business improved. Demand has been negligible, and prices have been weakening.

SHEETINGS

40-inch	2.50-yard	yd.	.14	@	—
40-inch	2.85-yard	yd.	.12¼	@	—
40-inch	3.15-yard	yd.	.13½	@	.13¼
40-inch	3.60-yard	yd.	.11½	@	.11¾
40-inch	3.75-yard	yd.	.10⅛	@	.10½
40-inch	4.25-yard	yd.	.09	@	.09¼

DUCKS

Belting	lb.	.37½ @	.38½
Hose	lb.	.37½ @	.38½
Enameling	lb.	.40 @	.45
Shoe Ducks	lb.	.41 @	.46
Single filling	lb.	.17 @	.19
Double filling	lb.	.20 @	.21

BURLAPS

(Carload Lots)

7½-ounce	40-inch		8.10	@	—
8 -ounce	40-inch		8.40	@	—
10 -ounce	40-inch		10.70	@	—
10½-ounce	40-inch		10.85	@	—

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THE MARKET PLACE Section Continued on Second Page Following.

Reclaimed Rubber

NEW YORK, Feb. 17, 1926

Statistics showing the production of reclaimed rubber in the last quarter when compared with inventories are a good index to the conditions in the market. The fact that production was considerably increased, although stocks on hand grew but little, points to a stable market. During the last two weeks a steady demand continued, and indications are that the present activity in the market will last for some time.

Friction (Uncured)				
No. 1	lb.	.40	@	.45
No. 2	lb.	.35	@	.40
High Tensile Black				
Super-Reclaim No. 1	lb.	.35	@	.36
" " No. 2	lb.	.21	@	.22
Shoe				
Unwashed	lb.	.10¾	@	.11¼
Washed	lb.	.13¾	@	.14¼
Tube				
No. 1 (Floating)	lb.	.25	@	.30
No. 2 (Compounded)	lb.	.19	@	.20
Tires				
Black unwashed	lb.	.11½	@	.11¾
Black, washed	lb.	.12¾	@	.13
Black selected tires	lb.	.13	@	.13½
Dark Gray	lb.	.16½	@	.17
Light Gray	lb.	.18	@	.19
White	lb.	.24½	@	.25
Truck, Heavy Gravity	lb.	.11	@	.11½
" Light Gravity	lb.	.11½	@	.12
Miscellaneous				
Mechanical Blends	lb.	.09	@	.10
Red, High Grade	lb.	.23½	@	.25

Scrap Rubber

NEW YORK, Feb. 15, 1926

There has been little change in the scrap rubber market during the last two weeks. Dealers are marking time, waiting for reclaimers to come into the market, but the latter do not seem to be interested in view of the unsettled state of the crude rubber market. It is believed that the continuance of crude rubber prices at current levels would bring about a healthy demand for both scrap and reclaimed rubber. Reclaimers have enough scrap rubber on hand to carry them through to March, when large spring stocks of scrap are expected to bring lower prices.

Auto tire peelings		.01⅞	@	.02
Standard White auto	ton	40.00	@	45.00
Mixed auto	ton	27.00	@	28.00
Bicycle tires	ton	15.00	@	17.00
Clean solid truck tires	ton	40.00	@	43.00
Boots and shoes		.02¼	@	.02⅜
Arctics, untrimmed		.01	@	.01⅛
Arctics, trimmed		.01⅜	@	.01½
Inner tubes, No. 1		.09½	@	.09¾
Inner tubes, No. 2, compounded		.08½	@	.08¾
Air Brake Hose	ton	24.00	@	25.00
Rubber hose	ton	15.00	@	17.00

Crude Rubber

NEW YORK, Feb. 15, 1926

The market has been dull and quiet during the last two weeks. Buying by factories was practically negligible and little of this business was reported. The fact that values held in the face of lack of consumer purchasing aroused favorable comment as to the future of the market. Bullish views were abetted by the small differential between nearby and distant positions on both the Cocoa & Rubber Exchange and the street.

Latex continued scarce and was sharply higher than ribs, the differential being greater than normal. There were more sellers than buyers almost every day but neither group appeared to be very anxious to negotiate contracts. A gain to 70 cents sellers spot ribs made on the 8th was lost shortly after the opening on the next day. Confirmed reports of factory reselling were heard on the market. There were also reports that factories were requesting delayed shipment on Feb./March deliveries. The result was to weaken the market, not only through the resale parcels thus made available, but through the belief that factories were not in need of rubber and would not be at an early date.

The fact that factories were well stocked turned many of the leading brokers sellers on the 10th. Prices were easier both in New York and London in a slow market. Few bids were reported in any position and those were generally at levels considerably below sellers' ideas, with the latter not pressing their offerings. Opening up easy and a fraction under the previous day's prices on the 12th, a slightly more active demand and London firmness brought about a rally and the market closed one cent higher. There were buyers of February ribs at 65 cents, with sellers ½ cent above that level. March was bid up to 64½ cents and April/June to 64. The market was slow the next day, with dullness in London and lack of factory demand blamed.

Outside of the two exchanges, the market was quiet today. London stocks were reported as 9,571 tons, against 9,554 tons a week ago, 8,882 tons a month ago and 26,690 tons a year ago. Rumors are heard that producers would rather hold their rubber than dispose of it much below current levels.

NEW YORK MARKET

Plantations—			
Ribbed Smoked Sheets			
Spot	.63	@	.64
February	.62½	@	.63½
March	.62	@	.63
April/June	.61½	@	.62½
First Latex, crepe spot	.64½	@	.66½
Amber Crepe, No. 2, spot	.60	@	.61½
" " No. 3	.59	@	.60½
" " No. 4	.58	@	.59½
Brown Crepe, Rolled	.55½	@	.57
" " Clean, thin	.59½	@	.61½
" " Specky	.57½	@	.59
Pontianac—			
Bangermassin	Nominal		
Palembang	Nominal		
Prime Pressed	Nominal		
Sarawak	Nominal		
Paras—			
Up-river Fine	.58	@	.60
" Medium	.54	@	.56
" Coarse	.46	@	.48
Islands, Fine	.52	@	.54
Acre Bolivian, fine	.57½	@	.60
Tapajos, fine	.47	@	.49
Cut Beni Bolivian, fine	.57½	@	.60
Caucho Ball—			
Upper, shipment	.46	@	.48
Centrals—			
Corinto, scrap	.43½	@	.45½
Esmeraldo, sausage	.45	@	—
Guayule, washed	.52	@	—
Africans—			
Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
" " red	Nominal		
Kassai, Prime Red	Nominal		
Balata—			
Block, Columbia	.65	@	—
" Cuidad	.62	@	.63
Surinam, sheet	.68	@	—
Gutta Percha—			
Siak	.27	@	.29
Red Macassar	8.50	@	—
Chicle—			
Mexican, Yucatan	.58	@	.68

LONDON MARKET

Standard Ribbed Smoked Sheets—	
Spot	31½d
Feb./March	31½
April/June	31¼
July/Sept.	30¼
Oct./Dec.	29½

SINGAPORE MARKET*

Standard Ribbed Smoked Sheets—	
Spot	31⅛d
Feb./March	30¾
April/June	30⅛
July/Sept.	29⅞

*The Singapore market was closed in observance of the Chinese New Years. Prices given are those of February 12.

NEW ENGLAND SOUTHERN MILLS

MANUFACTURERS OF TIRE FABRICS

This group of Mills is thoroughly equipped to produce coarse builders, breakers and chafers in all grades of cotton, in yarn numbers ranging from 4's to 30's in order to meet the demand for coarser yarns and lower cost fabrics.

LAWRENCE & CO., SELLING AGENTS

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The Market Place

3.

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Stamford Rubber Supply Co.
Stamford, Conn.

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Prompt Service—Let us quote you.
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Cost is moderate—
Results are sure.

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FOR TIRES, MECHANICAL GOODS & DRUGGIST SUNDRIES.
The Akron Rubber Mold & Machine Co.
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RECLAIMED RUBBER
A standardized grade for every requirement.
U. S. Rubber Reclaiming Co., Inc.
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"43 Years Serving the Industry Solely as Reclaimers"

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For
Various Rubber Stocks
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MOLDS AND CORES—
Tire building equipment; general machine work.
The Akron Equipment Co.
Akron, Ohio

RED OXIDE—A special grinding, guaranteed uniform in color and quality.
Joseph A. McNulty
114 Liberty St. New York City

MACHINERY—
Heater Presses, Molds and Cores, Tubing Machines.
The Williams Foundry & Mach. Co.
"In Business Since 1888"
Akron, Ohio

MOLDS & CORES—Tire building machines; tire finishing stands; tubing machines; hydraulic presses.
The Akron Standard Mold Co.
Akron, Ohio

RUBBER—Crude and scrap, all grades.
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Liggett Bldg. New York
Akron, Chicago, Boston, Hoboken

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Leading Concerns are now using the MARKET PLACE—
***That proves the value* of listings in this section.**
Arrange for yours now!

MOLDS & CORES—for automobile tires; general machine work.
Kuhlke Machine Co.
Akron, Ohio

RECLAIMED RUBBER
We specialize in fine Grey, Black and Red Reclaimed Rubber.
Send us Your Inquiries
The Defiance Rubber Co.
Defiance, Ohio

YOUR NAME
in this space would be seen by Buyers, Chemists, Engineers and Executives in all rubber plants.
Write for full information

THE MARKET PLACE Section Continued on Second Page Following.

CHEMICALS & COMPOUNDING INGREDIENTS

Accelerators — Colors — M.R. — Compounding Ingredients
Softeners — Vulcanizing Ingredients — Rubber Substitutes

NEW YORK, February 16, 1926.—General opinions on the condition of the chemical and compounding materials markets agree that February has been a dull month so far compared with last month's business. Tire manufacturers have let down somewhat in production resulting directly from the lack of dealer demand following the recent tire price decrease. This has resulted in slackened demands for most compounding materials as is shown by the 25% decrease in shipments in carbon blacks and other ingredients. Accelerator business has only been fair with Zinc Oxides moving somewhat faster. This condition is not viewed with alarm by the industry and a return to full demand and normal shipments can confidently be expected by March 1 or March 15 at the latest. No important price changes are recorded, the latest quotations being as follows:

ACCELERATORS

Organic			
Aledhyde ammonia, crystals	lb.	.82 @	—
Aniline oil, drums	lb.	.17 @	.17½
Crylene	lb.	.70 @	—
paste	lb.	.50 @	—
Di-Ortho-Tolylguanidine	lb.	1.05 @	1.08
Diphenylguanidine	lb.	.93 @	.95
Ethylidene aniline	lb.	.60 @	.65
Excellerex	lb.	.35 @	.40
Formaldehyde-Aniline	lb.	.40 @	.42
Grasselerator 102	lb.	.80 @	.82
Grasselerator 552	lb.	4.80 @	5.00
Grasselerator 808	lb.	1.50 @	1.75
Heptene	lb.	.55 @	—
Hexamethylene-tetramine	lb.	.80 @	.82½
Monex	lb.	4.00 @	5.00
Paraphenylenediamine	lb.	1.25 @	1.30
Piperidine-Piperidyldithio-Carbamate	lb.	4.80 @	5.00
Super-Sulphur No. 1	lb.	.50 @	—
Super-Sulphur No. 2	lb.	.18 @	—
Tensilac, No. 41	lb.	.65 @	—
Thiocarbanilide, kegs	lb.	.28½ @	—
Triphenylguanidine	lb.	.70 @	.75
Tuads	lb.	4.50 @	5.00
Vulcone	lb.	.75 @	.79
Zimate	lb.	5.00 @	—
Inorganic			
Lead, sublimed blue	lb	.10 @	.10½
Lead, white	lb.	.10⅜ @	—
Litharge, compound	lb.	.11⅝ @	.12½
Lime, superfine	lb.	.01½ @	.02
Magnesia, calcined, light	lb.	.10 @	—
extra light	lb.	.40 @	.45
heavy	lb.	.04½ @	—

COLORS

Blacks			
Arrow "Aerfloted"	lb.	.09½ @	.13½
Bone Black	lb.	.05½ @	.11
Carbon "	lb.	.09 @	.13
Drop "	lb.	.07½ @	.14
Ivory "	lb.	.12 @	.45
Lamp "	lb.	.12 @	.40
Micronex	lb.	.10 @	.14
Thermatomic carbon	lb.	.05 @	—
Blues			
Prussian	lb.	.33 @	.35
Ultramarine	lb.	.08 @	.35
Browns			
Sienna, Italian	lb.	.04 @	.14
Umber, Turkey	lb.	.04 @	.06
Greens			
Chrome, light	lb.	.28 @	.31
medium	lb.	.30 @	.32
dark	lb.	.31 @	.33
commercial	lb.	.09 @	.10
Chromium Oxide, bbl.	lb.	.35 @	.38
Reds			
Antimony crimson, 15/17	lb.	.27 @	—
sulphur free	lb.	.48 @	.50
vermillion 15/17	lb.	.37½ @	—
golden, 15/17 F.S.	lb.	.16 @	—
pentasulphide, pure,	lb.	.33 @	.35
15/17 F.S.	lb.	.26 @	.30
Indian English	lb.	.11 @	.15
Oximony	lb.	.13½ @	—
Para toner	lb.	.90 @	1.00
Red oxide, reduced	lb.	.04 @	.12
pure	lb.	.12 @	—
Blue Ridge	lb.	.12 @	—
Toluidine toner	lb.	1.80 @	2.10
Venetian red	lb.	.01½ @	.05
Vermillion, quicksilver, English	lb.	1.45 @	1.55
Whites			
Albalith	lb.	.05⅞ @	.06⅛
Aluminum bronze		.55 @	1.20
Lithopone, Akcolith	lb.	.05⅝ @	.06
Litnopone, Azolith	lb.	.05⅝ @	.06⅛
Zinc Oxide—American Process XX red	lb.	.07½ @	.07¾
Kadox, black label, kegs	lb.	.10⅝ @	.11¼
blue " " "		.09⅝ @	.10⅛
red " " "		.08⅝ @	.09⅛
American Azo: ZZZ (lead free)	lb.	.07¼ @	.07¾
ZZ (under 5% leaded)	lb.	.07 @	.07½
Zinc Oxide—French Process White seal	lb.	.12⅝ @	—
Green seal	lb.	.11⅛ @	—
Red seal	lb.	.10⅛ @	—
Yellows			
Chrome, light		.17½ @	.18½
dark and medium	lb.	.17½ @	.18½
Cadmium Sulphide	lb.	1.20 @	1.50
Ocher, French medium	lb.	.03½ @	.03⅝
domestic	lb.	.01¾ @	.02½

COMPOUNDING MATERIALS

Aluminum Flake (f.o.b. plant)	ton	21.85 @	24.50
hydrate light	lb.	.16 @	.17
Ammonia carbonate	lb.	.11 @	.12½
Are-O Sel	ton	8.00 @	11.00
Asbestine	ton	14.50 @	18.50
Barium carbonate	lb.	.03½ @	—
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	12.00 @	18.00
Western prime white	ton	23.00 @	—
imported	ton	27.00 @	34.00
Basofor	lb.	.04½ @	—
Blanc fixe dry f.o.b. works	lb.	.03¾ @	.04
Carrara filler	lb.	.01¾ @	.02
Catalpo (fact.)	ton	35.00 @	38.00
Chalk, precip., extra light	lb.	.04½ @	.05
heavy	lb.	.03½ @	.04
Clay, China, domestic	ton	15.00 @	25.00
Aerfloted Suprex	ton	20.00 @	30.00
Dixie	ton	20.00 @	35.00
Blue Ridge, Dark	ton	9.00 @	—
" " Light	ton	12.00 @	—
Langford	ton	12.00 @	22.00
Glues, extra white	lb.	.20 @	.29
medium white	lb.	.18 @	.24
common bone	lb.	.12 @	.14
Graphite flake, bbls.	lb.	.06½ @	.12
Liquid latex	gal.	3.00 @	—
Magnesia, carbonate	lb.	.08 @	.09
Mica, powdered	ton	65.00 @	80.00
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.81 @	—
Talc, domestic	ton	16.00 @	18.00
Terra Alba	cwt.	1.25 @	2.00
Tripoli, white	lb.	.02 @	.02¼
Whiting, commercial	cwt.	1.00 @	1.15
Alba	ton	12.00 @	—
gilder's bolted	cwt.	1.25 @	1.35
English cliffstone	cwt.	1.50 @	—
Paris whiteAmerican	cwt.	1.25 @	1.50
Quaker	ton	13.00 @	15.00
Superfine	ton	10.00 @	12.00
Sussex	ton	8.00 @	10.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	33.00 @	—
Hydrocarbon, Hard	ton	29.00 @	—
Hydrocarbon, Soft	ton	29.00 @	—
320/340 M.P. hydrocarbon (c. l. factory)	ton	47.00 @	52.00
300/310 M.P. hydro-carbon (c. l. factory)	ton	42.00 @	47.00
Paradura	ton	70.00 @	72.50
Robertson, MR, solid	ton	35.00 @	75.00
M.R. (gran)	ton	42.00 @	80.00

SOFTENERS

Acids			
Acetic, 28%	cwt.	3.25 @	3.50
Cresylic, 97%	gal.	.65 @	.72
95%		.62 @	.69
Muriatic, 20%	cwt.	.90 @	1.00
Nitric, 36 degrees	cwt.	4.75 @	5.00
Sulphuric, 60 degrees	ton	10.00 @	11.00
66 degrees	ton	14.00 @	15.00
Tartaric, crystals	lb.	.29 @	—
Alkalies			
Caustic soda, 76%	cwt.	3.60 @	—
Soda ash, 58% C.L.	cwt.	1.43 @	1.45½
Oils			
Castor, No. 3 bbls.	lb.	.13 @	—
Corn, crude, bbls.	lb.	.11¼ @	—
refined	lb.	.13 @	—
Cottonseed, crude		.09¾ @	.10
Glycerine, C.P. drums	lb.	.25 @	.26
Linseed, RawC.L.bbl.	gal.	1.05 @	—
Liquid Rubber	lb.	.12 @	—
Moldrite	lb.	.05 @	.06
Palm, Lagos		.08⅝ @	.08⅞
Niger	lb.	.08½ @	.08¾
Peanut, domesticcrude	lb.	.12 @	—
Petrolatum, white		.11 @	.11⅛
amber		.03⅞ @	.04
dark amber	lb.	.03⅝ @	.03¾
Pine, steam distilled	lb.	.60 @	.65
Rapeseed, refined	gal.	.88 @	.94
blown	gal.	1.10 @	—
Rosin, first rectified	gal.	.78 @	—
second rectified	gal.	.82 @	—
Soya Bean, crude		.13¼ @	.13½
Synthecite	lb.	.06 @	—
Tar, commercial	gal.	.50 @	.52
Resins and Pitches			
Tar Retort	bbl.	15.00 @	15.50
kiln burned	bbl.	15.00 @	15.50
Pitch, Burgundy	lb.	.06 @	.06½
coal tar	gal.	.05½ @	.06
pine	bbl.	8.50 @	9.50
Resin, grade K	bbl.	15.65 @	—
Solvents			
Alcohol denatured, No 1 bbls.	gal.	.39 @	.47
Benzol, 90%	gal.	.28 @	.30
pure		.32 @	—
Carbon bisulphide	lb.	.05½ @	.06¼
tetrachloride	lb.	.06½ @	.06¾
Dimethylaniline	lb.	.31 @	.32
Motor gasoline, steel bbls.	gal.	.18 @	—
Naptha, V. M. & P.	gal.	.15 @	—
Toulene	gal.	.31 @	—
Turpentine, spirits	gal.	1.01 @	1.02
wood	gal.	.90 @	.92
Waxes			
Beeswax	lb.	.60 @	.61
Carnauba, No 1	lb.	.46 @	.47
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
ParaffineWhiteA.M.P.	lb.	.05⅜ @	.05½
Yellow A.M.P.	lb.	.05¼ @	.05⅜

ANTI-OXIDANTS

VGB	lb.	.70 @	—

SUBSTITUTES

Black	lb.	.08½ @	.14
White	lb.	.10 @	.17
Brown	lb.	.10 @	.15
Brown factice	lb.	.10 @	.16
White factice	lb.	.10½ @	.17½

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.18 @	.20
Ethyl Chloride, Cyl.	lb.	.55 @	—
" " Drums	lb.	.45 @	—
Sulphur Chloride (drums)	lb.	.04 @	—
Sulphur flour Superfine, bags	cwt.	2.20 @	2.50
" bbls.	cwt.	2.60 @	2.90
100% pure, refined, bags	cwt.	2.35 @	2.90
bbls.	cwt.	2.90 @	3.15